

AMERICAN VETERINARY REVIEW.

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EDITORIAL.

EUROPEAN CHRONICLES.

It is some time since I had the pleasure to send our readers some European news, but, after all, the fault is not so much mine, as that of bad luck, which has permitted one of my manuscripts to be lost, or it may have been devoured by whales or other inhabitants of the deep in crossing the Atlantic. Now that my friends in New York have told me of the danger I will try to redeem myself with a promise of more exactitude in the future.

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TUBERCULOSIS—AGE OF LESIONS.—That was the subject of my lost chronicle, and it was too interesting and important for me not to renew it concisely.

Our readers will remember that last July I spoke to them of a commission which had been appointed to carry out a series of experiments with the object of determining the incubative stage of tuberculosis and the age of the lesions that were found at post-mortems. The programme was well laid, and the animals divided into lots, to be infected in various manners, some by being fed with tuberculous matter, others to be contaminated by inhalation of tuberculous powders, some by injection of emulsion of tuberculous culture in the teats, one was to receive it in the trachea and one into the jugulars.

The entire series of experiments were carried out according to the programme, the temperature carefully registered, and

the post-mortems, made at stated times, were witnessed by every member of the commission. Without going into the minute description of the entire proceedings—which may be later on presented in full in the REVIEW—I will only for the present state the interesting and important conclusions that those experiments justify.

(1) *Ingestion* is a mode of contamination far less efficacious than inhalation; in spite of an enormous mass of tuberculous matter taken by the animals per mouth, one stood the infection without harm; three others were infected to a very slight degree, and in two others the lesions were so small that they would have escaped notice if the autopsy had been less minute. One calf born of one of those cows was fed from birth with tuberculous milk and became infected only to a very slight degree. The period of incubation with those animals has varied between 32 and 48 days.

(2) The respiratory apparatus is the most ordinary and most efficacious way for tuberculous infection. Whether the tuberculous substances were *inhaled* as dry impalpable dust or in fine sprays the results were about the same. The period of incubation varied between 19 and 32 days. Direct injection into *the trachea* has not given the results which might be expected, as the lungs remained healthy and the manifestations of the infection remained localized at the point of the injection. In the animals whose air passages were infected by pulverization and sprays the thoracic organs were filled with tuberculous lesions.

(3) If the mucous membrane of the trachea is resistant to microbial infection, it is not so with the mucous membrane of the *mammary excretory ducts*. By the experiments made in this series, it was shown that the udder is of all the tissues of the living organisms the best media of culture for the bacillus of tuberculosis. Incubation with these cows varied between 3 and 13 days.

(4) The *intravenous injection* showed itself the most severe and quickest mode of infection. No conclusion can be derived

from this experiment as tuberculous infection never occurs in this way.

(5) This last conclusion is one which has the highest importance to the practical point of view, viz.: that upon none of the animals experimented upon, no matter how short the incubative stage had been, or how quick the evolution of the disease had been, none of the lesions had undergone the process of softening or of calcification, which it may be said is the rule among tuberculous bovines.

To resume and answer the two principal questions presented to the commission :

(1) Whatever is the mode of contamination, a certain lapse of time always passes between the time when the contagion has entered the organism and that when it manifests its effects by reaction to tuberculin; the duration of this incubation varies; in the experiments, where the chances of infection were the greatest, it has been of 19 to 32 days for infection by inhalation and of 32 to 48 by ingestion.

It is certain that in ordinary natural contagion, the duration of the incubation is longer.

If, then, a recently bought cow reacts to tuberculin within 30 days from the day of sale, the practitioner is perfectly authorized to conclude that, *in all probability*, the animal was infected before the sale.

(2) It is often difficult to give an opinion as to the age of the lesions found at the autopsies: the experiments do not bring definite answers to that subject; yet, if the lesions that are found at post-mortems are softened or calcified, whatever may be their extent, no matter how small and limited, the veterinarian can now in all certainty say that these lesions have existed for more than fifty days.

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UNIVERSAL EXHIBITION OF 1900.—The great international fair of Paris has closed, and of all the grandeur which filled it and was witnessed by millions of people, there soon will remain but the souvenir. Millions of people came—and among

those how many were interested in the veterinary exhibits, how many were veterinarians? No doubt the number of our European colleagues must have been quite large. Were there many Americans? I do not know. I had the pleasure of meeting only two. Perhaps there were more, but how could we meet in such large crowds? Now, however, our address is known to all our readers, and if any of them visit the gay city, we hope they will let us know it. But to come back to the veterinary exhibit.

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To be correct, we ought to say exhibits—for there were six veterinary exhibitions. The collective of the French Schools, the retrospective of agricultural and veterinary teaching, the collective veterinary (practical) exhibition, the sanitary veterinary exposition of the Seine, and the exhibition of the Saumur School. The foreign veterinary schools were not gathered under one roof, but spread here and there in their pavilion or special exhibits of their respective countries. Of all those I wish to call the attention of our colleagues to that of the French schools and the sanitary exposition, as being those which can interest them the most and from which they can derive information and benefit by them.

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The collectivity of the *French schools* was a good move—not only because it shows their intimacy and friendly relations, but because it permitted a grander exhibition of the great resources of the three establishments, and of the opportunities that they offer to students. Everything that could be desired was represented there, but that which drew our attention the most was the pedagogical side of the exhibition—that is, the utilization of the most modern methods of scientific teaching. It is no longer sufficient to express with beautiful language and fine delivery excellent ideas; what is better is to force them into the memory by demonstrable facts. One does not forget, or forgets less, when he has seen, when he has touched; and it is with this plan in view that veterinary schools were so bril-

liant in their exhibitions, even more so than those of human medicine and surgery.

The department of anatomy was there to tell us the rich means that the French schools have at their disposal. Casts upon casts—casts which are in wax, in plaster, in papier maché. They are colored; they look like nature; they are no doubt superior to natural pieces, fresh or preserved, which in many instances fail to be of any use to the teacher. Among those which belong to Alfort, there is one of an entire horse with all the muscles; one of the post-diaphragmatic viscerae, the large intestines, arteries and nerves of the head, of the extremities, etc. This application of casts in the teaching of descriptive anatomy is also applied to surgical and pathological anatomy, and it is with those that lesions at post-mortems are kept always ready to be looked at, to be touched by the student, whose mind is then far better impressed.

In this Lyons deserves a special mention. It shows a torsion of the small intestine, one of the folded, an invagination of the small intestine, a hernia of the same through the hiatus of Winslow, a traumatic pericarditis, tuberculous lesions and tumors, etc. At Alfort we saw casts representing actinomycosis, epithelial cancer of the bladder, a pyelo-nephritis of a steer, etc.

Besides all those, there were large collections of fresh specimens, of paintings, photographs, etc.

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THE SANITARY VETERINARY EXHIBITION of the Seine was also very attractive, and especially the section where pathological lesions were placed. There was a splendid collection of casts in wax, reproducing with perfection various lesions. Each piece is painted in true natural tone and deceives to that point that they are by many taken as fresh pieces. Measly pork meats of various regions are imitated with surprising correctness, echinococci of the kidney, tuberculous lesions of all kinds, those of pleuro-pneumonia, of glanders, of foot-and-mouth disease, etc. Plates, paintings and photographs re-

lating to meat inspection, are also exhibited in profusion.

In other words, there, as in the exhibits of the schools, the greatest and most useful show is that of those casts ; where the teacher can find excellent material for thorough demonstration.

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FOREIGN VETERINARY EXHIBITIONS.—It is to be regretted that this international exhibition was not collected into one single building ; as the various countries were distributed, comparison was difficult. *Hungary* was well represented, and was a great rival with the French schools. The school of Budapest was well represented. *Russia* was principally remarkable by the exhibition of the laboratory of agricultural bacteriology. In *Austria*, like the preceding, the reproduction by casts of pathological lesions was complete and interesting. *Denmark* was represented by the laboratory of the Veterinary Institute of Copenhagen. *Belgium* sent maps of statistics of cattle. *Norway* exhibited maps relating to tuberculosis and anthrax. *Germany* sent photographic views of the Hanover school. *Roumania*, photographic albums of the Bucharest school. *England*, a small collection of shoes with some specimens of osteology. *Italy*, *Bosnia* and *Japan*, some photographic and anatomical specimens.

Of the *United States*, the only thing I saw was the bulletin of the University of the State of New York, giving a full account of the standing of veterinary education in the United States. Of course the Bureau of Animal Industry had also its special display, which was not the least among the foreign exhibitions.

A. L.

THE BATTLE IS OVER—AND LOST.

The struggle of the veterinary profession for recognition in the Army of the United States was more vigorously waged during the years 1900-1901 than ever before ; every muscle was strained, every resource exhausted to obtain a favorable decision by Congress. We were so very near success that the REVIEW for January congratulated the profession upon the roseate pros-

pects of complete fulfillment of its ardent hopes. Before that month had expired we found ourselves confronted by as ignoble a defeat as it was possible to receive.

The brief history of the effort which has resulted so disastrously dates back less than a year, when Senator Kenney, at the instigation of the Committee on Army Legislation of the American Veterinary Medical Association, introduced an amendment to the Army Efficiency Bill, creating a Veterinary Corps, which, although opposed by the Committee on Military Affairs, passed the Senate May 4, 1900, by a narrow margin. At the Detroit meeting of the A. V. M. A. the committee made a full and vigorous report, urging united effort for a last strong pull, giving the members the assurance of vivid prospects of success; and never was there a more loyal response from men working unselfishly for a grand purpose. The association supported the committee morally and financially, and from every section of this country the profession stood solidly together and stretched every nerve to fulfill the hopes that had been engendered by the favorable action of the Senate, and the assurances emanating from the members of the House. Nor were the committee or the profession over-confident, for they had previously tested the friendship of the high officials of the War Department, and felt that they had little to hope for from that quarter. It is true that various members of the profession had preferences as to the form of advancement which the army veterinarian should receive; some believed that the demand should have been more modest, that an entering wedge of simple rank would have given greater promise of success than the establishment of a corps, with high ranking officers and divorcement from the Adjutant-General's authority; but they were evidently in a minority, and it was conceded that a house divided against itself must fall, and, throwing aside their individual views, struck out for what seemed likely to receive official sanction. It is unnecessary here to recite the efforts which followed the adjournment of the meeting at Detroit. The position of the association was endorsed by State and local associations, every

Representative and Senator was besieged with appeals from their veterinary constituents, and as a proof of the efficiency of that united effort when the bill reached the House of Representatives on Dec. 6, notwithstanding the bitterest attacks of its enemies (see January REVIEW), it passed by a vote of 72 to 80. Upon technical grounds the amendment which had passed the Senate eight months previously, was, with the other provisions of the Army Reorganization Bill, brought up for discussion and decision again in the Senate, and when the January REVIEW went to press the bill was awaiting the action of that body. It was fair to assume that the Senate, whose *personnel* was little changed from its constitution of last May, would be consistent enough to stand by its declared policy, and especially so when a canvass of its august members showed a clear majority in favor of the Veterinary Corps. We are assured that enough Senators had pledged the committee of the A. V. M. A. their support to justify the prediction that the amendment would pass beyond the shadow of a doubt. But nothing was taken for granted. Two members of the committee (Chairman Salmon and Secretary Huidekoper) were continuously upon the ground, while members Pearson, Clement and Lowe were lending efficient aid from a distance. Just at this point the fine hand of the War Department was suddenly brought into action, through alarm at the unsuspected strength shown by the veterinarians in the two Houses of Congress, and they worked upon Secretary Root with so much success that he came out flat-footed in violent opposition to the bill, sending to the Senate on the morning of January 7 (the day of its consideration) a vigorous protest, supporting his contention by a semi-official letter of the Secretary of the New York State Veterinary Medical Society, both of which received wide publicity in the morning papers of the Capital and the country. Alarmed at the danger of Secretary Root's bomb, many telegrams from veterinarians were hurried to the Senate chamber, in the hope of counteracting the effect of the blow; but, alas, the mischief was done. The amendment was beaten by a vote of 43 to 5.

A hope yet remained that the conference of the two houses would give the veterinarian the rank of second lieutenant, if the corps was lost. In fact, the Secretary of War seemed rather to favor it, and many Senators who bitterly opposed the formation of a corps, conceded the justice of rank, and our champion, Senator Gallinger, offered an amendment embodying that proposition, which was promptly voted down, and the veterinarian of the United States Army remains as he was, a civilian employee, without rank, dignity, authority, or respect beyond that which is accorded to individuality.

The Committee of the A. V. M. A. have worked so valiantly, intelligently and indefatigably, that the sincere thanks of the profession will not be withheld from them on account of the failure of their efforts at the eleventh hour. They have already issued a preliminary report, setting forth a complete history of their stewardship, and close the document by the Phoenix-like statement: "We will at a later time render another report and suggest an outline for future action."

SOME IMPORTANT FUNCTIONS OF ASSOCIATION WORK.

The new constitution and by-laws of the consolidated State association of New Jersey, adopted January 10th at Trenton, create two important committees—a Public Health Committee and an Animal Industry Committee—the work of which, if intelligently conducted, which we have no doubt will be the case, will be of incalculable benefit to mankind and to the animal industry of the State. These two committees, we understand, have been established at the suggestion of President-elect Lowe, which indicates that his administration will be along scientific and advanced lines with a view to applicability and practical usefulness.

It is made the duty of the Public Health Committee to investigate, advise and report on animal diseases, animal foods, sanitation and other matters relating to and concerning the public health. The Animal Industry Committee shall investi-

gate, study and report on all practical problems and questions relating to the breeding, maintenance and utilization of animals with a view to fostering and placing animal husbandry, in all its phases, upon a more scientific, economic and profitable basis in that State. This important branch of veterinary science has been left almost entirely to the layman to manage the best he could, sight being lost, in many instances at least, in the practical value of a scientific application of the physiological laws governing the animal industry.

DR. D. E. SALMON, Chief of the Bureau of Animal Industry, has been engaged in a lively discussion upon the subject of the tuberculin test with Hon. John Dryden in recent numbers of the *Breeder's Gazette*. Unfortunately this usually sound stock paper entertains some very dangerous views upon the subject of tuberculosis, the dissemination of which will render the systematic control of the disease by the Government more difficult, since it greatly underestimates the contagious character of the malady. A campaign of education, carried on through farmers' institutes and the public press, is the surest method of placing the subject before stockmen in its true light.

ORIGINAL ARTICLES.

MAMMITIS.

BY W. L. WILLIAMS, PROFESSOR OF SURGERY AND OBSTETRICS, NEW YORK STATE VETERINARY COLLEGE.

Read before the Genesee Valley Veterinary Association, Rochester, N. Y., July 13, 1900.

It is neither the purpose nor desire to offer under present limitations a full discourse upon so important a malady as mammitis nor to present anything very new or remarkable. Things appear differently according to the position from which they are seen, and it is only by observing an object from every possible point of view that we can secure a perfect impression of it, and

it is merely hoped to offer here a few old ideas from what may possibly be to some of you a new vantage ground and perchance renew an interest in an old and important theme in the work of the every-day veterinarian.

For our purposes we shall look upon mammitis as wound infection, not theoretically, though that is frequently the case, but practically. The "wound" consists of the delicate lacteal cells lining the alveoli, the more protective and older of which are shed at the period when mammitis is most prone to occur, leaving a surface little less resistant against infection than a real wound; the orifice in the teat serves to maintain communication with the exterior, and the milk within the gland, milk sinus or cistern, represents in our plan the blood or lymph poured out into the wound cavity, acting as a foreign body and serving as a nidus for bacterial multiplication, upon which the living, bactericidal tissues can exert but little influence. We shall enter into no argument as to the correctness of this view, since this is not essential to our purpose.

Upon this hypothesis mammitis may be caused by any of the known pathogenic micro-organisms capable of causing wound infection in the ordinary technical sense, such as the various pus-forming streptococci, staphylococci and bacilli, with the occasional addition of special forms like actinomyces and bacilli tuberculosis. So far as known any bacteria capable of inducing wound infection is alike competent to produce mammitis, and conversely any of the micro-organisms found in mammitis are probably capable of infecting wounds.

Viewing the mammary glands of domestic animals as seats for wound infection they offer interesting variations and resemblances in the different species. As in other organs mammitis occurs more frequently as the milk producing qualities are intensified by breeding or feeding, so that it is observed most commonly in ruminants (cow, goat, ewe), and far more frequently in the dairy than in the beef cow.

We have suggested that the milk retained in the udder might be compared to blood or lymph extravasate in a wound,

in which case the larger the volume of milk retained in a body the greater the source of danger, and we find this borne out again by our observations that animals having commodious milk cisterns like the cow, goat, and ewe suffer most frequently and acutely from mastitis, although otherwise more immune against wound infection than some other animals. Franck has also pointed out that in udders possessing milk cisterns the infection is general in that division of the gland emptying into the infected cistern, so that in the cow usually an entire quarter is infected, while in carnivora the infection may be limited to a lobule of the gland. Udders without milk cisterns are notably vulnerable to carcinoma, sarcoma and actinomycosis, thus suggesting that a large quantity of milk in a cistern where it plays the part of a foreign body in relation to infection invites acute purulent disease, while in the absence of this the more chronic and permanent infections are liable to occur.

The method of infection may vary, and as Vennerholm (Bayer and Fröhner's Handbuch, B. II., Theil III.) and others hold, may be through the medium of the blood or lymph stream or through the teat orifice. The infection of the udder by means of the blood or lymph stream, like in ordinary wound infections, speaking from a clinical standpoint, is well-nigh unknown, except perhaps tubercular mastitis, and we shall therefore not consider this phase of the question further.

As in ordinary wounds the infection occurs almost always by methods readily understood, through the teat orifice, which from our point of view represents the wound opening. Aside from the predisposition to mastitis owing to extreme development of the milk glands and the presence of a milk cistern, we should expect, and do find, the affection most common in those animals the teats of which most frequently come in contact with putrefactive substances, such as rapidly decomposing excreta, retained placenta and the like, and these conditions are best filled by ruminants, the prominent inguinal udder with its long teats being unusually exposed to contact with infective material while the animal is recumbent, the long teats being compressed,

bent, twisted, possibly even somewhat opened and not rarely actually wounded.

In the quadruple udder of the cow, the posterior quarters being more exposed, naturally suffer most.

The origin of the infection, as in ordinary wounds, varies greatly. First of all, we must recognize the presence almost universally within the udder of bacteria capable under favorable conditions of inducing disease.

The popular notion that milk within the udder is sterile has been quite thoroughly disproven, and it has been found by investigators, among whom we may name Mr. A. R. Ward, Cornell University, that the active udder is rarely if ever wholly free from bacteria, the flora being extensive and including streptococci, staphylococci, and bacilli of varieties only awaiting favorable conditions to demonstrate their pathogenic power. These we liken to the bacteria found living upon the patient's skin ready to generate inflammation upon the occurrence of an injury to the part. They are in fact closely allied to skin bacteria. Aside from this inevitable danger, the contact of the teat orifices with putrescent dung and urine when the animal is recumbent, not infrequently perhaps even the introduction of a soiled piece of hay or straw through the orifice into the milk cistern, the contact with the teat openings of decomposing retained placenta, the trickling down over the udder and teats of discharges in cases of metritis and vaginitis, or soiling the udder and teats with these discharges through the medium of the tail, all account in a general way for the origin of the disease. The presence of suppurating wounds on the skin of the teats almost always leads, as is well known, to severe mastitis, evidently by the micro-organisms finding their way to and through the teat opening. In the same way, cow-pox, sheep-pox, contagious apthæ, and other eruptive affections of the teats lead commonly to mastitis, not perhaps through extension of the disease itself into the gland, but by the secondary suppurative affection leading to infection through the teat orifice.

Viewing mammitis as wound infection, all cases are in a

broad sense transmissible, but we find outbreaks of mammitis, especially in ruminants, which are known as contagious or infectious mammitis and which at times become enzoötic over a wide area and cause severe losses to stock owners, besides rendering questionable the wholesomeness of the milk supply. In any of the foregoing cases there is no essential bar to transmission from one animal to another, and frequently we note clinically the extension of mammitis from one quarter or half to another, evidently by the same but more concentrated means by which it could be carried further to other animals either near or remote. In the so-called contagious forms, so far as known, the infection possesses a more marked preference for the milk gland as a habitat and acquires a degree of virility which greatly favors transmission, and the means which might occasionally carry infection under ordinary conditions now becomes an effective and common bearer of contagion from infected to healthy, so that infected bedding or floor may answer, or the tail may transplant the infection from cow to cow, while the milker carries the disease from affected to healthy on his unwashed hands, or if this is not enough, uses milk from an infected cow to moisten the teats of a healthy one and transmits it in this way through the milk. In a recent outbreak of mastitis in ewes, investigated in our clinics, it was found that the lambs were puny and emaciated, and upon close examination it was observed that they had a pustular eruptive affection of the lips and nose, caused apparently by streptococci, which were not distinguishable from those found in the gangrenous udders of the affected ewes.

Here then we had good clinico-bacterial evidence of transmission from lamb to ewe, and *vice versa*, in nursing.

If we carry our comparison further we have an exceedingly vascular glandular tissue enclosed within a firm sheath of yellow elastic and fibrous tissue from the abdominal tunic, which once the parenchymatous tissue becomes engorged or inflamed the investing aponeurotic capsule prevents yielding to the swelling, leading to compression of the inflamed tissue with

impairment of circulation. The channel through the teat serving as an exit for wound secretions, while dependent, is anything but free, clots occluding the passage, while higher up the swelling of the gland tissue closes the milk ducts. The inflamed part is also dependent to an injurious degree, which can not be materially modified by changing the posture of the patient, nor have we yet succeeded markedly in fostering a better circulation by mechanical support of the gland.

The symptoms are ushered in usually by an abnormal condition of the glandular secretion, the milk may be clotted, watery or tenacious, odorless or foetid, white, yellow, bluish or, if containing blood, reddish; in gangrene it becomes chocolate colored, the amount is decreased in varying degrees, in many cases to an almost or complete cessation, which may prove temporary or permanent. Microscopically it consists of clots of casein, decreased amounts of casein, fat and sugar, increase of salts, sometimes red blood cells, generally pus cells, and bacteria in abundance and of various kinds.

The color of the skin covering the affected gland as in wound infection differs, in some forms it is unchanged, in others there appear varying degrees of redness, according to the intensity of subcutaneous inflammation, and when gangrene threatens or becomes established, the color becomes a dark livid or black.

Swelling may be absent throughout the attack, especially in a common form of so-called contagious mastitis of cows, the "gelber galt" of the Germans, while the other extreme is observed in acute gangrenous mastitis of cows and ewes, where the affected parts swell rapidly and extremely, the swelling extending to the surrounding parts, as the perineum, inferior abdominal walls and thighs; the swelling of these adjacent parts partaking chiefly of an oedematous character. Between these two extremes every degree is observed, the character varying from a rather yielding, oedematous swelling in acute cases, to firm, hard schirrhous masses seen in chronic mastitis of cows and the so-called botryomycosis of the udder of the mare.

The local temperature, as revealed to the touch, is as vari-

able as the swelling or color. Usually there is well marked heat, which may be very intense in acute cases, but frequently absent in chronic attacks and in the "contagious mammitis" or "gelber galt."

The advent of gangrene, if the skin be involved, is indicated by coldness, usually accompanied by moisture of the parts and detachment of the cuticle upon touch, but if the gangrene is confined to the deeper parts of the gland the skin may not reveal its presence in this way, though usually the teat of the affected gland gives early indication of the processes taking place within.

Pain in the affected gland varies and is differently expressed. Usually the animal resists milking or the nursing of the young, by moving or kicking, hesitates in severe cases to lie down, and walks as if lame in the leg on the affected side, or with a straddling gait, when both sides are affected.

The constitutional symptoms offer even greater variations than the local changes and consist essentially of the symptoms of wound infection. Constitutional symptoms are frequently absent, notwithstanding grave local disturbances, even to the formation of abscesses and gangrene. They include changes of body temperature, including fever or elevation and subnormal temperature in coma or collapse, and changes in the circulation, usually a marked increase in rapidity of the heart beat with either increase or diminution in the fullness of the pulse, while respiration behaves in rather close conformity with circulation. The digestive system suffers early and severely. In ruminants the muzzle tends to become dry and hot, and rumination ceases. The appetite is depressed, bowels torpid and constipated, or diarrhoea is present. Metastatic inflammations occur in various joints. Paralysis as a result of toxæmia is occasionally observed in the cow.

The course may be acute or chronic. I have observed death in ten to twelve hours, while many cases drag through weeks or months. Usually it extends over a period of 5 to 15 days.

The prognosis is grave. The so-called recovery or resolu-

tion is largely theoretical. Not only is the activity of the affected gland generally diminished, but there is a constant tendency to recurrence with each calving. Occurring usually a few days after parturition, mammitis brings about a serious diminution of milk secretion, for that milking term at least, frequently destroys the function of the affected gland permanently, causes great emaciation, renders the milk from other portion of the gland unsafe for human food during the disease, and not infrequently causes the death of the patient.

The treatment constitutes one of the most perplexing problems in veterinary surgery.

Viewing mammitis as a wound infection, we at once turn to disinfection as the fundamental principle of treatment, and our entire energies need be directed to the one end. We have compared the milk within the inflamed udder to the lymph and blood within a wound, and naturally we would wish to remove this as promptly, frequently and perfectly as conditions will permit, the same rule applying with equal force to pus or other wound secretions. It may be milked out in the usual manner, but if very much clotted it may be advisable or necessary to dilute and break up the clots by injecting into the gland a 1 per cent. soda solution at 100° F., to which may be added 3 to 5 per cent. hydrogen peroxide. Fomentations and massage also facilitate its withdrawal. This mechanical removal of abnormal milk mixed with disease secretions, removes bacteria and bacterial products in a degree worthy of consideration, but the chief disease changes and absorption of morbid products are taking place within the acini of the gland and the deeper structures and are not so favorably affected by the milking process as desired.

It has been proposed to disinfect the inflamed gland by the injection of antiseptic solutions, and various preparations have been recommended or proposed without thus far demonstrating their practicability. Sublimate, carbolic acid, boric acid and others have been used, with apparently the best results from a weak solution of boric acid, which really amounts to little more

than sterile water, and has led some writers to suggest that the washing of the milk cistern and sinuses by means of the sterile water and milking this out constitutes the real advantage of such treatment.

Two serious obstacles stand in the way. First, the irrigation is incomplete, as the fluid cannot be made to penetrate far into the gland, the swelling of the lacteal cells filling the acini. Only 1 to 2 pints usually can be injected at a time into a quarter of the udder of a cow, and this we can not imagine as coming into intimate contact with the great secretory area. Second, antiseptics irritate the gland seriously, so that the more common members of this group of drugs dare not be introduced into the udder of a strength to cause the death or check the multiplication of bacteria.

Corrosive sublimate, carbolic acid, etc., are not allowable unless in cases of extensive suppuration where the solution comes in contact with virtually or actually an abscess wall. Peroxide of hydrogen has given us the best results among this class of agents. But we must confess that the drug theoretically superior to all others, we have neither tried nor seen an account by others of its trial. It seems clear to us that the best preparation possible for this use is iodoform, which being comparatively insoluble would remain in the gland for some time, gradually liberating iodine and inducing no irritation, but acting as a local anodyne. It should be injected dissolved in one of the lighter fats, olive oil, liquid vaseline, or butter fat. We hope to give this remedy an early test.

Disinfection by external application—that is, by cutaneous absorption over the gland—has always held an important place in the treatment of mammitis. The skin now becomes the irritated part, if any, and any disinfectant which will not injure the cutaneous covering of the gland becomes available, while those which are most readily absorbed possess the highest value. So Bang and others extol highly iodine and camphor, while from the same standpoint others commend turpentine as an external application.

Indirectly much that is apparently done for other objects operates in a similar manner. Belladonna, hyoscyamus and other members of their group probably are in a degree directly antiseptic, but largely indirectly by stimulating the vessel walls, causing their contraction and leading to a more effective circulation, always inimicable to the life of the germs of wound infection. Blood stasis on the other hand favors their growth.

Massage and fomentations tend in the same way to check bacterial production. For the same reason Vennerholm and many other writers favor the use of suspensories with poultices, while still others commend the application of various adhesive applications which in drying contract and tend to relieve congestion by mechanical support.

Systemic disturbances demand the practitioner's attention and it is questionable in many cases whether the local or constitutional treatment is the more important. We know that pathogenic bacteria largely lose their power of multiplication and of injury in the absence of their products, hence if the system can successfully eliminate these an essential arrest in the progress of infection has been made.

The eliminative agent recommended is purgation, and in the past this has been largely confined to the use of saline and oleaginous cathartics. While their value cannot be denied they are defective because of slowness of action in acute cases where time is all important.

More effective theoretically are pilocarpine and eserine, which act within $\frac{3}{4}$ to $1\frac{1}{2}$ hours. They have the advantage of promptness, they can be quickly repeated until desired effect is had, and while stimulating the action of the bowels, at the same time arouses, with energy, excretion by almost every gland in the body, markedly the salivary and cutaneous, and it has appeared to us the milk glands also. These drugs have an effect closely allied to the hypodermic or intravenous injection of salt solution and the intra-mammary injection of Schmidt in the treatment of parturient paresis. This latter is, of course, not available in mammitis.

In a case of acute mammitis of all four quarters in a cow, following Schmidt's treatment for parturient paresis, where gangrene and death appeared imminent, the administration of pilocarpine and eserine in combination reduced the temperature from 106° to 103° F. in 3 hours, the tumefied udder had greatly relaxed, milk had returned, rumination had been resumed after several hours cessation, appetite and thirst had returned, the muzzle was again moist and the general appearance had changed from dullness and indifference to cheerfulness and a lively interest in her calf. We have no doubt but that pilocarpine and eserine promptly administered in small and frequently repeated doses will prove of very great benefit in acute mammitis. We would suggest as a dose for the cow 1 1/2 to 2 grains eserine and 1 to 1 1/2 grains pilocarpine subcutaneously, repeated hourly until the purpose is attained. Should these be unattainable we have little doubt that the intravenous injection of 2 or 3 pints of saline solution would answer a similar purpose.

Should these lines of treatment fail us, and suppuration or gangrene occur or fatal toxæmia threaten, operative treatment is warranted or demanded. An extensive abscess in a gland means its total ruin or at least practical uselessness; partial destruction generally inviting recurrent mammitis with each calving with special danger of infecting neighboring glands. As in any other abscess, free opening and dependent drainage are indicated, and for this there are two plans: first, a free incision through skin and dartos into the abscess cavity, parallel to the long axis of the teat, followed by appropriate treatment by disinfection and antiseptic packing; second, amputation of the teat at such a point as will afford sufficient drainage. The incision into the gland itself would be preferable in most cases, because when free it relaxes the dartos and thus relieves the pressure upon the inflamed gland. In chronic induration of the gland with emaciation of the animal a free incision through the dartos and into the centre of the glandular tissue, the incision extending from the highest point of the affected gland to

the base of the teat, relieves the engorgement and acts in the same manner as a free incision into an infected punctured wound penetrating a firm aponeurosis. Such treatment is of course only admissible when hope of recovery of the gland has been abandoned.

When gangrene appears or the life of the animal is threatened, amputation of the gland is indicated, though possibly not always imperative, while in chronic induration, with unwieldy enlargement of the udder, amputation is frequently advisable because of the annoyance of the enlarged gland to the animal and the probability of recurrent attacks of inflammation. The general rule in reference to amputation would be to operate as soon as the gland has passed beyond reasonable prospect for recovery and consequent future usefulness, and threatens at the same time the animal's life or its value aside from the affected gland. The so-called botryomycotic mammitis of the mare generally demands amputation, as do also the neoplasms in the mammæ of the bitch.

This operation, not prominently described in English, is simple, comparatively safe, and its results usually highly favorable. The arrangement of the glands makes it practicable to amputate half or all the gland. In the cow the intimate connection between the two quarters of each side make it impracticable to amputate a quarter while the septum formed from the abdominal tunic between the two halves makes them readily separable. In gangrene prompt operation is demanded, while in botryomycosis, induration, etc., delay and deliberate preparation may be warranted.

Technique.—Secure the animal in such a position as to expose the affected gland freely (dorsal or lateral decubitis), anæsthetize the animal, cleanse and disinfect the operative area; if the skin is healthy, preserve enough to cover the wound area after operation (if gangrenous remove all gangrenous portions), and make a free incision under antiseptic precautions through the skin at the lower part of the udder from before to behind, the length of the gland, the line of the incision being

lateral to (outside) the teat, and follow this by a second similar incision, beginning and ending at the same points, but passing on the median side of the teat, thus isolating it in the centre of an ellipse the extent of which should vary with the size of the gland. The skin is then detached with the fingers or a blunt instrument toward the median raphé and upwards toward the thigh. Bleeding vessels are seized with compression forceps, cauterized or ligated. The only vessels demanding ligation are the subcutaneous abdominal vein and the small artery accompanying it in front, and the chief vessels of the gland, the external pudic arteries and veins emerging from the inguinal ring; the others can be controlled by cautery or temporary compression.

After the skin is well detached, the capsule of the gland (dartos) is cut through along the median raphé, and on the external side between the superior surface of the gland and the abdominal walls, and the detachment of the gland continued by tearing through the loose connective tissue until finally the gland has but one attachment, the bundle of inguinal vessels composed of pudic artery and vein, with nerves and lymphatics. These are long and extensible and should be ligated *en masse* high up against the ring and then cut through as low as possible, leaving a long stump from which the ligature will not slip. After severing the vessels and removing the gland a separate ligation of the pudic artery is a wise precaution as severe after hæmorrhage sometimes occurs. The ecraseur is not to be trusted as a hæmostatic for the pudic vessels. If both halves are gangrenous, remove the second half in the same manner. The wound should be closed as well as admissible with sutures, and drainage provided by drainage tubing or antiseptic gauze or packing, followed by ordinary treatment for wounds. We should bear in mind that amputation of the udder is by no means so serious as would be thought at first glance. Encapsuled within the aponeurotic sac derived from the abdominal tunic the gland has little intimate connection with adjacent tissues, so that in amputation but little violence is done to impor-

tant tissues. We had occasion recently to remove the entire gland from a 2-year heifer, on account of gangrene. The udder was enormously swollen and would weigh about 40 pounds, was black, cold, œdematous, and from each teat a dark brown fluid constantly dropped. The eyes were sunken and listless, the pulse imperceptible, the gait tottering, and every indication pointed to early death. She was cast, the parts disinfected, and the entire udder, skin and all (the skin being gangrenous), was removed, leaving an open wound surface of 3 to 4 square feet. The wounded tissues were extremely fœtid and attracted swarms of scavenger flies. Alcoholic stimulants were administered and the wound treated by frequent washing with 1-1000 sublimate solution. The patient rallied at once and made an uneventful, though necessarily somewhat tardy recovery. The case serves to demonstrate the value of the operation. The patient is of course useless for milk purposes, but available for beef, and were she a valuable pedigreed animal could still be used for breeding. When but one-half of the udder is removed the animal will yield a fair amount of milk, more than one-half, probably 75 per cent. the normal amount.

In cows not valued for breeding and where calving would invite recurrence, the animal should be spayed, and when through milking, sold to the butcher.

The control of outbreaks of infectious or enzoötic mammitis should be based wholly upon disinfection, the process being thorough in every detail and applied to every possible source of danger. Affected animals should be kept apart from the apparently healthy, milked and cared for by separate persons and utensils if possible, and the secretions from the gland should be effectively destroyed. If separate quarters, caretakers and utensils are not available, the affected cow should be milked last. The stable should be kept clean, dry and disinfected, preferably with dry disinfectants, while the milk vessel, the udder and the milker's hands should be thoroughly disinfected severally, that is, the milker's hands and the milk pail should be disinfected after milking each apparently healthy cow in an af-

fectured herd, to guard against infection from an apparently healthy animal which may be actually diseased. Young animals which are permitted to suck, should receive attention as disease bearers. In the severe outbreak of gangrenous mammitis in ewes, which we have mentioned above, it was found that the lambs were suffering from pustular eruptions of the nose and lips. The free application of silver nitrate to the ulcers and bathing the diseased lips freely with tr. iodine and glycerine, equal parts, promptly arrested the mammitis in the ewes. This outbreak suggests that in every case we should seek for the source of infection and attack it. In ordinary mammitis, the general rules for controlling the so-called contagious species should be applied to the more limited field to prevent the affection from spreading from gland to gland.

SWINE TROUBLES IN CLINTON COUNTY, N. Y.

By J. A. McCRANK, V. S., PLATTSBURGH, N. Y.

Read before the New York State Veterinary Medical Society, September, 1900.

It has always appeared to me, that according as man's ingenuity lessens labor, by means of electricity, machinery, etc., our Divine Master, ever fearful of our falling into sin or becoming disobedient to his holy will on account of idleness, furnishes us with other grades of labor. Years ago our forefathers, ignorant of the advantages of modern methods, were pleased to cut their crops with the reaping-hook, thrash it with a flail, and clean it with the old-time hand-fan. Our grandmothers hackled, spun and wove into linen the flax from the field. Now all this work is done by machinery. During those olden times none of us have records of our forefathers laying aside the hook or the flail to give battle to the Colorado potato-bug, nor of our grandmothers leaving the wheel or the loom to save the orchards from the raids of the army or tent caterpillar. So during those days of hard labor the farmers and hog raisers of Clinton County experienced no troubles in raising hogs; so free was the hog from disease that no attention was paid to its selec-

tion, its feed, or its sanitary care. Any type of hog was good enough for pork. No attention was paid to what herd it was taken from ; and as for feed, anything was good enough for a hog ; the hovel it was kept in was little better than a cesspool.

In this manner our people worked on until machinery took their places in the field and elsewhere ; man was obliged to stand idly by, employing neither body nor mind. But such is not to be our lot, for Providence sent disease among our herds of hogs. Our minds, until then easy, were turned toward the herds of swine. We began to think, to read ; observations began which brought about a revolution. We now select and breed with much care ; we use great precautions from what herds we buy and breed ; we are very careful in choosing and curing the food ; the old-time hovel, 4 feet high, 7x10, is replaced by large, high, well-lighted and ventilated rooms, which are cleaned and whitewashed with care.

The disease which made its appearance among our hogs we call "Hog Cholera," for want of a better term, I suppose ; but we claim that we have very good grounds for so terming it, though I think we have other troubles among the hogs brought about from dietary disorders.

In 1891 Mr. A., a farmer near our village, visited me, complained that he had been losing a great many hogs in past years, and wished that I would pay a visit to his herd and suggest measures to save his pigs and stay the raids of disease. I visited the herd, found some dead, others dying, etc. I made several post-mortems, and from the lesions I found, my attention was directed to the feeding, for I believed at that time that there was no hog cholera in the east. On investigation I found that the feed was swill gathered from the hotels and boarding-houses of Plattsburgh. The sanitary surroundings were not good, and in general the hogs were poorly understood and cared for. At my suggestion the animals were divided into three divisions. Division 1 was made up of all the healthy animals, division 2 the suspicious ones, and division 3 the diseased ones. Each of the apartments was now clean, large, well lighted and

ventilated. Division 1 was fed on good food, divisions 2 and 3 were fed on the swill as gathered. I wanted to save those in division 1 and to prove the food to be at fault. Results: Of 41 in division 1, 4 died, 3 remained of 11 in division 2, one scrawny skeleton survived 9 in division 3.

We congratulated ourselves with those results, for Mr. A. saved very few hogs from the raids of this disease in past years. The next year, 1892, about the same time of the year, October and November months, the disease renewed its raids. This time we did not meet with such success, for very few hogs were saved. We visited the places the swill was gathered from and made a request that no soaps should be allowed in washing dishes. The result here was gratifying, for our hogs seemed to improve for a time, but we soon learned that the help about those houses bought soaps with their own wages, and our hogs again began to drop away. The third year we had hogs and cattle change sheds, reduced the numbers, boiled the swill. Our losses became gradually less yearly. Last year we lost none on that farm. We cannot speak for this year yet, although some forty hogs are feeding there at present.

In 1897, the Hotel Champlain Company, thinking that money was wasted, because the refuse from the dining rooms and kitchen was carried out and dumped into the lake and elsewhere when the neighboring piggeries did not want it, bought 100 hogs; a large field was set aside for them, then this refuse or garbage consisting of, as you all know, was brought to the fields in loads and dumped. The weather was hot during the summer months, and this garbage spoiled and very soon became unfit for even a hog to eat. Sickness broke out in the herd, death after death occurred, I was called in, I made a few post-mortems. I gave my experience as to cause and probable results. Of course I suspected soaps in dishwashings and impure foods. The caretaker, manager and myself visited the dishwashing corps to ask that soaps should not be used. We were met by a storm of opposition so violent that I vacated my position of advantage and left the building, the others escaped

after me. We concluded to sell the herd. Consequently cars were backed up at the depot, the healthy appearing porkers were loaded on and shipped to the markets of New York City, while the sick ones remained to die as they would.

I believe that those two herds suffered and died from the results of improper care and impure food, acting on the whole animal system.

Mr. D. owns a meat market in our little village, he has his own slaughter-house in the vicinity, where he keeps a great many hogs, feeding them on the offal from the slaughtered animals. Disease broke out in 1892 and over \$1500 of hogs were destroyed, leaving none. In 1893 he moved his slaughter-house to other fields, thinking the old field and surroundings were at fault; he bought and gathered together some 80 hogs. The disease renewed its attacks again; we had them driven into the country about five miles further, put them into a wooded lot and changed the food. They were 300 yards or more from farm buildings or other hogs. Their food was good farm produce, but with all our trouble we saved two, I think; and, what is very strange, while they were thus dying the farmer's own hogs contracted the disease and all died. Both men now quit raising hogs for two years. Of late years they each raise a few only; occasionally one or two take sick and die, and so far as I can see they died from the same disease as did those of 1892 and 1893. They get no village swills, consequently no soaps. It appears to me that the disease does not cause such wholesale destruction now because fewer animals make up the herds.

Mr. F. owns a bakery in our village. He usually kept 14 or 15 hogs, which were fed on the sour breads from the shop, the stale breads, etc., from the store, slops from his own kitchen, only he denies that any soaps found their way to the pigs. This herd was kept dry and clean, with abundance of sunlight and air, though they were cramped for room, I believe. In 1891, my first year in Plattsburg, I was approached on the matter. I made post-mortems on all the animals as they died. The

lesions which presented themselves led me to think that there was some intestinal disturbance; I considered that the food was not at fault, the sanitary conditions could not be bettered, so I pronounced the trouble to be some specific hog disease. At my suggestion fewer hogs were kept, in order to see what changes might be wrought. Mr. F. raises now 4 or 5 hogs and has no trouble. He feeds as before.

Mr. M., a wealthy farmer in our district, keeps from 80 to 125 hogs. He, too, gathers swill from hotels and lake transportation companies. The disease worked terrible havoc with his flocks. The sanitary conditions of his buildings are not even to-day good. I have worked hard in his herds, for he asks me to take full control of his yard, to do as I like with sickly animals. We change pastures and feed with gratifying results for a time; these changes seem to wear off and death repays us for our efforts. I believe to-day that this man will be obliged to keep fewer hogs in order to rid his herd completely of this disease. Pardon me now if I step farther, possibly a step too far. We think we are breeding immune animals. The sows which survived the disease, and they are very few, are considered proof against the disease. They are bred, and rumor says the young will not take the sickness. I believe there is something in it. Very few animals die now in this herd, but, if a new hog is bought and exposed with the others in the herd, even if none of them are sick, he will take the disease and die.

In 1897 an outbreak of this trouble occurred in Keeseville, a neighboring village. The herd belonged to a hotel man who fed slops from the kitchen as well as other foods from the farm—good food, I considered. They were herded in the basement of a large barn into which manures were thrown. They exercised in a large paddock adjoining the barn and on a hill-side. The animals had abundance of air and light, a dry place to sleep in, although they might lie and root among manures. About 40 young and old animals made up this herd. When they began to die I was called. I made a few post-mortems, killed a few sickly ones. I recognized our hog troubles at

once, and as I had been corresponding at the time with Drs. Williams and Moore, of Cornell, about my terrible afflictions up in Clinton County, I crated two young ones which showed signs of the trouble, but strong enough to stand the journey. I expressed them to Dr. Moore. I was satisfied that I had hit the nail on the head now. The pigs were shipped on July 19th, 1897. On July 22d, I received the following letter from Dr. Moore, saying: "The pigs arrived last night, and when taken from the box crate they ate with a relish. They are unsteady in their walk, otherwise appear to be very well. They will be kept under close observation until further symptoms develop." After one month's anxiety for further information, I received the following welcome letter, dated Aug. 18, 1897. "One of the pigs you sent us died from chronic hog cholera on July 30th, and the other died this morning. After receiving them they improved for some days and I thought would recover, but now they are both dead. There was no paralysis in excess of that found in hog cholera."

Being satisfied now that this Keeseville herd was infected with hog cholera, I wished very much to know if Mr. M.'s herd was not the same, for I could discern no difference in post-mortem lesions. So on Nov. 1st, 1897, I made a post-mortem on a hog recently dead, secured a portion of the lung, liver, spleen, kidney and intestine, cured them as well as I knew how and sent them to Dr. Moore.

On Nov. 4th I was rather disappointed to receive the following letter: "I am sorry to say that after all your precautions, the tissues were badly decomposed when they arrived here. They were evidently infected with putrefactive bacteria before they were packed. The intestine suggested in its appearance hog cholera. It may, however, be some dietary disorder." Unsatisfactory and all as this last venture proved to be, I gathered some consolation that the intestine suggested "hog cholera" and claim yet that this disease invades the premises of Mr. M.

We consider our Clinton County swine troubles to be con-

tagious, and toward that end I will give you just a few more instances.

Our County Fair, which is being held in Plattsburgh this week, is attended by animals from all parts of this State, Vermont and parts of Canada. Prize herds of cattle, sheep, swine, poultry, etc., are exhibited there. In 1898 a prize herd of hogs from Fort Edward or that vicinity was shown there. They were placed among our own local herds. During Fair week two of this herd died of our supposed hog cholera; they were buried on the grounds, I believe. Since that week four of our farmers have lost heavily from the raids of this disease. Those herds were heretofore free from all diseases. We think that the disease was contracted from too close proximity with this infected herd. We are now battling with the managers of the Fair to prevent foreigners exhibiting at our fairs as well as our locally infected herds.

Mr. Clarke had a brood sow, mother to several choice young ones. Mr. Clarke's herd was heretofore free from disease. The young pigs had been sold to various farmers about the county, and remained on the mother until old enough to be taken away. A few nights previous to their being moved the mother broke out from her yard. Leaving the young ones at home, she visited along the way and met with Mr. M.'s herd, which were herded on a pasture by the roadside. After about half an hour's visit, I believe, she was driven home. In a few days the young ones were fetched to their respective homes; time passed, the young pigs and mother took the disease—all died.

Mr. M. bought a shoat from Mr. Sawyer, whose herd is free from this disease. The hog was taken to Mr. M.'s home and put with other animals. Next day Mr. Allen bought this young fellow from Mr. M. It was now moved to Mr. Allen's yard in a pen by itself, but could nose through to Mr. A.'s own hogs, which were free from the trouble. In two weeks' time this young fellow fell ill and died. Mr. Allen saved one of five of his own hogs. On those grounds we consider the disease contagious.

Symptoms.—While I am of the opinion that more than one disease has been described so far in my paper, I think one set of symptoms with variations describes both. Sometimes the animal is noticed becoming emaciated before ceasing to eat; others refuse food at once, but in both cases they like to suck at water or liquids, apparently afraid or unable to swallow. They shiver and bury themselves in the litter, and will not move unless urged very much. There is lack of control of the hind parts, an unsteady gait, a peculiar sneezing cough is noticed, redness of the skin about ears, belly, inside of legs. Diarrhœa sets in early and continues until death, but often I have met with constipation replacing diarrhœa. The fæces are of a very black color, with a bad odor and ejected apparently with pain. Toward death these red spots become darker. The animal becomes unable to get up and remains so until death. There seems to be soreness of the body, especially over the abdomen.

Post-mortem.—I made post-mortems on nearly 50 per cent. of the deaths. In fully 90 per cent. of the cases the skin about the ears, abdomen, thighs, inside of legs were marked with blackish spots; in very few cases there were no external discolorations. Some cadavers were very much emaciated, while others were plump and fat. The intestines in many cases contained a sticky black fæces of bad odor. At other times it contained a dry black excrement, which cracked like a piece of clay when an effort was made to bend it, and as if the stomach and digestive apparatus were unfit to do their work. I have found where a grain of oats, barley, or wheat was swallowed, uninjured by the teeth, it took root in the contents of the intestine, grew to be three inches long, dying for want of air and moisture. In all cases there was inflammation of intestines of a more or less marked character. Gangrene had often set in before death; at other times I have found an ulcerated patch of intestine containing this jelly-like stool. The mesenteric glands are enlarged and hæmorrhagic. The stomach contains a mass of undigested material; the liver is solid, spleen often enlarged, kidneys about normal. The lungs are always more or less

affected, the pleura is thickened, the bronchi and bronchioles are inflamed and contain a frothy mucus; the lymphatic glands throughout the body are enlarged and hyperæmic.

Treatment.—We observe preventive measures and sanitary rules. When we have large numbers we divide them into smaller herds. When an animal appears to be sick it is taken away at once and put by itself or with the sickly ones. We will not buy from strange herds, neither do we want attendants from infected herds visit where the hogs are free from disease.

ENSILAGE POISONING?

BY N. S. MAYO, CONNECTICUT STATE AGRICULTURAL COLLEGE,
STORRS, CONN.

In private practice, and particularly in State sanitary work, one frequently runs across apparently mysterious and undescribed diseases. The writer does not offer the following as a new disease, or an undescribed one, but it is a condition which the writer, although having considerable experience in live stock sanitary work, has never met before, nor have I seen it described in the literature at my command.

The writer does not presume to entertain a new and valuable opinion on the subject, but hopes he may receive information from those who have met with this condition, or have had a wider experience in the study of animal diseases.

May 11th, I was called to a large dairy farm near Hartford, to investigate a disease, which was attacking the dairy cows. One of the cows I found dead upon my arrival, one sick, and another taken sick ten hours later.

The symptoms were practically the same in the two cows observed, and from the description of the symptoms exhibited by the cow that died, as they were described by the owner, who is an intelligent and careful observer, I feel confident that the first cow suffered from the same condition.

What made the owner especially anxious regarding these animals was the fact that a year previous, at the same time of

the year, he had lost four cows with what appeared to him to be exactly the same disease. All of the animals taken sick the year previous to the time of my visit died.

The first symptoms noticed were a loss of appetite, the eyes appeared bright, there was no lopping of the ears, the respirations were labored, the temperature normal, there was no pain, and no thirst, although the animals lapped the water very frequently; the cow seemed weak. There was a slight elevation of temperature, about 103, in the early stages, but later after the first 24 hours the temperature dropped below normal, ranging from 98 to 99; there was marked constipation, but later this gave way to diarrhoea.

The passages were not frequent, but were abnormally fluid; the heart's action was weak and rapid, there appeared to be no congestion or inflammation in either lung, and I was at a loss to account for the labored breathing.

In the course of 24 hours after the first symptoms were noticed, a passage of mucus from the nostrils was noted, and this increased in quantity, and became purulent until a short time before death.

The animals lived about five days after the first symptoms were observed; towards the last they became somewhat delirious, and would push their heads against posts, or sides of the barn, even breaking the boards with the force of the exertion. The animals gradually grew weaker until death took place, or they were destroyed when there were no hopes of recovery. The symptoms and progress of the disease were practically the same, and the owner assures me that the four cows lost the previous year died with the same symptoms.

Autopsies made on all three animals, gave the following results:

The animals were well fed and in good flesh for dairy cows, the intestines were irritated, and severely congested in patches, the stomachs were also congested in patches, the manifolds congested and the food contained in the manifolds being abnormally hard and dry; the omenta were hard and stiff, and looked as if

they had been taken out and dried; the liver was congested, the bile being thick and dark, and in abnormally large quantities; the spleen contained some hæmorrhagic spots; the kidneys and bladder were normal, as was the urine. The lungs did not collapse on opening thoracic cavity, and were found to be greatly distended with air, or gas (there was no odor to this), which had infiltrated into the cellular tissue to such an extent that the lungs completely filled the thoracic cavity; this accounted for the labored respiration, which had proved extremely puzzling. The mucous membrane of trachea and bronchial tubes was slightly congested, and the tubes were filled with large amounts of mucus; there were no parasites observed, either in the lungs, or other portions of the body.

The cerebral meninges were congested, as were the brains of all animals; this may have been due to the weak heart's action. From all three animals cultures were made on agar and gelatine, from the liver, heart, blood and lymphatic glands. Smear mounts were also made for examination. No pathogenic bacteria were found in any of the cultures.

The treatment adopted was a purgative followed by stimulants; but as the disease progressed, little was done except observe the symptoms carefully. An examination of the surroundings to determine the cause, if possible, was made.

Two of the cows stood side by side, the other was some 30 feet away.

There were 28 cows in the stable, confined in stanchions in two rows facing, with passage ten feet wide between them. These three cows happened to be in one row, but the year previous two cows had died from one row, and two from the other. The stable was well lighted, well ventilated, and dry, there being a basement below. Spring water was piped into the barn; the same water was used at the house, and seemed to be of excellent quality.

The ration consists of gluten meal, bran, and a small amount of corn meal, a good quality of timothy hay and clover was fed, together with ensilage. The ensilage was taken from a

brick silo, 23 feet in diameter, and was of bad quality, being black and mouldy. The silo was so large that the feeder could only get over the surface once in two days, and then removed only about 1 1/2 inches.

The cattle seemed to eat the ensilage readily. This ensilage was fed the year round, and was the only thing to which the disease could be attributed, so far as could be observed. The cows had been kept on the place for a year, and no new animals had been introduced. They were kept in the barn a greater portion of the time. The writer is not satisfied that the bad ensilage was the cause, but the reasons for attributing to it the bad effects are the absence of any other apparent cause, and that the disease occurred at the beginning of warm weather, when decomposition is apt to take place more rapidly, and from the symptoms observed, the opinion was formed that death was due to a ptomain poisoning of some kind.

Following directions, the owner cut down a section of the silo, and in this way could utilize the ensilage before it spoiled on the surface; that which appeared to be spoiled was thrown away, and no further bad results were noticed.

It should be noted, that if death was due to ensilage, why have not some other of the cows suffered from its effects?

The writer confesses to misgivings as to the true cause and nature of the disease. If any readers of the REVIEW can furnish explanation, either personally, or through the columns of the REVIEW, they will be gratefully received.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

FOREIGN BODY IN STENO'S DUCT—ABSCESS—RECOVERY.

By L. R. WEBBER, V. S., Rochester, N. Y.

July 6.—I was called to see a brown gelding with the history that he did not seem to eat as well as usual; also that the

submaxillary glands were swollen. I examined him and found his temperature slightly elevated and a slight tenderness to the touch of the glands. I diagnosed influenza and prescribed febrifuges and ammonia liniment.

July 7.—Temperature almost normal; no more, if any tenderness, and eating better. Owner thought I had better see him next day.

July 8.—For all I could see was all right. Told owner he could use horse the following day.

July 9.—Owner called me, saying the horse was worse. Found temperature slightly elevated, and parotid gland swollen quite a little, but he was eating well. Had gland rubbed with ammonia liniment, and diagnosed distemper.

July 10 and 11.—Horse about the same, only swollen much more, and very sore. Put on blister of cantharides on 11th.

July 13.—Horse not eating, carrying head to one side, and swollen from base of ear, and filling submaxillary space. Still stuck to my diagnosis, but remarked when questioned by owner that it was out of the ordinary.

July 14.—Dr. Williams, of Ithaca, who was in our city, saw the case with me. He thought it was a distemper abscess; also thought it was out of the ordinary, but remarked that he had had such cases, and when they broke the whole bunch of horses in the barn came down with distemper. Foreign body in Steno's duct was suggested, but we finally came away with our minds made up that it was an abscess, *any way*. At this time it showed no sign of opening.

July 16.—Found it soft in two places; one, half way between base of ear and angle of inferior maxilla; another, in submaxillary space. I opened the lower place, and it contained a thin and very foul smelling fluid. I inserted my finger, and, to my surprise, took out a timothy head with about 1 to 1½ inches of stem, the head pointing upward. This opening not draining the soft place above thoroughly, I opened it and found it contained the same kind of fluid. My two openings connected, so I made connection larger. I now diagnosed it foreign body in Steno's duct. It healed slowly under antiseptic treatment, except in the extreme upper part of gland another abscess formed, about the size of an egg, which was lanced and treated. Henceforth the case did nicely and recovery became complete, the whole gland being destroyed.

TINCTURE OF IODINE IN FISTULÆ.

By T. J. PENCE, V. S., Troy, Ohio.

I have been a constant reader of the REVIEW for thirteen years. Would not be without it for twice the subscription price. I have learned a great deal from it, and now I think I can contribute something to the knowledge of others. I have discovered a cure for fistula in all its forms—head, inguinal, or any fistulous tract. It consists in the injection of the tincture of iodine to bottom of the abscess once in from five to eight days. I have cured fistulæ of both head and withers that had been running for months, and the horse was considered worthless, with from three to five injections. I now like to get fistulæ to treat since my discovery, while before I dreaded to treat them. I have never failed with this treatment to cure the very worst cases, and I believe that it is a specific.

I had a case in a mare with a running sore at the stifle for four months; it had formed a pocket ten inches down, outside of the leg. I opened the abscess at the bottom, washed it out with warm water; then injected tincture iodine pure into the cavity; held finger over opening below, pressed or worked medicine all through the cavity, and left some of the tincture to be put in after five days. The owner injected it one week afterward, instead of five days, and in two weeks from the time I opened it it was healed up, and now after four months is sound.

I could tell you of more than twenty parallel cases, but just one will suffice: A sorrel mare, belonging to a Mr. Geo. Young, had fistula of the head (poll-evil); had been treated by a cure-all gentleman of the neighborhood for three or four months; he had used a favorite prescription of his: turpentine, corrosive sublimate, etc., etc., until he had burned and eaten down the muscles and adjacent tissues until the mare could not get her head down to drink out of a bucket. Sitting on a chair I opened up each side, took out a half pint of dry flesh, washed it out well, put in tincture iodine, gave him some to put in every five days, and in three weeks the mare was healed up sound. There may be other medicines as good, but I have not found them out. I have long since believed that many fistulæ that would have gotten well if treated once in two to five days with this medicine were kept running by using the caustics too often and too strong. I trust others may have as good success with this treatment as I have, and that they will report their experience with it.

NECROTIC TESTICLE IN PIG.

By FRANCIS ABELE, V. S., Quincy, Mass.

Bought a ruptured pig with scrotal hernia. Operated at about six months old. One testicle was small and adherent. Cut into it. A thick, gray, grumous substance burst out. The nature of the contained material and the absence of rounded serous covering, the thickness of walls, etc. almost convinced me that the intestine was cut, but when atrophied epididymis was located, the true nature was discovered. It proved to be a necrosis of testicle, probably due to strangulation of blood supply.

POLL-EVIL AND ANTISEPSIS.

By FRANCIS ABELE, V. S., Quincy, Mass.

Horse had poll-evil. Abscess large and soft, ready to lance. Tissues about greatly swollen. Cast her, removed mane round about, cut out all skin over abscess, removed circular piece about three or four inches in diameter. This gave dependent drainage on both sides and plenty of room to get a plug in and wash out with a tent of cotton. Ordered that it be washed out once a day with tent of clean absorbent cotton in one cup of hot water with bichloride tablet, followed by cleansing with Oakland peroxide. The action of the latter attracted spectators regularly, so that the horse got plenty of treatment. It healed beautifully and, strangely enough, the scar does not seem to be over one-half inch in diameter.

PTOMAIN POISONING IN DOGS.

By FRANCIS ABELE, V. S., Quincy, Mass.

A kennel man took several dogs to walk for exercise one evening. All were in the best of spirits when put up for the night. On the next morning one was dead; a second had choreic actions and loss of use of legs; a third was having slight convulsions. Diagnosed enteritis, possibly due to some poison. Post-mortem showed stomach bloody and inflamed, empty of food, but containing at least a handful of fish bones, all loose, probably the head of a haddock. The others died the same day, even after evacuation of contents by vomiting, first filling up with bulky food. The suddenness of death surprised me.

Do YOU report your interesting cases in the REVIEW? Read the paragraph at the head of the Department.

DEPARTMENT OF SURGERY.

BY L. A. AND E. MERILLAT,

of the McKillip Veterinary College, Chicago, Ill.

NEPHRECTOMY.

Nephrocentesis, nephrotomy and nephrectomy are closely associated, and any one of these operations may be indicated for the same condition, or may be performed in succession for the relief of renal diseases. In our study of nephrectomy we shall divide the subject as follows :

1. History.
2. Indications.
3. Symptoms.
4. Mortality.
5. Operation.

1. *History.*—The operation has been performed upon animals for the purpose of perfecting it, and to demonstrate that animals can live with but one kidney ; besides, these operations have also been performed to ascertain the sequelæ that may be expected after the removal of a kidney, before applying such interference to human beings. The first successful operation of this kind was performed by S. Blancard, and the surgeons that witnessed it considered it a procedure applicable to human subjects. Nephrectomy was performed unexpectedly several times before it was undertaken as a planned operation, but at present it is being placed among the practicable surgical operations with a decreasing mortality. The first operation undertaken with a determination to remove the kidney of a human subject was performed by Simon, of Heilderberg, in 1869. The patient (a lady) made a good recovery, and since the operation has been frequently performed, with a mortality varying from 40 to 50 per cent. In experimental surgery on animals, the results are more favorable. This, however, is due to the unimpaired health of the animals used for such purposes. The operation is not a practical one for large domestic animals.

2. *Indications.*—In human surgery nephrectomy is looked upon with a degree of disfavor, because the mortality is large ; this is due to a certain extent to delaying the operation too long, and in some cases to the improper selection of cases. It may be expected that the percentage of mortality will always be high, even if the cases are carefully selected. In veterinary

surgery it is an operation that could not be performed upon herbivora with any degree of assurance as to results, especially in the equine species ; but, in carnivora, when performed for experimental purposes, the results are generally favorable. To recommend its use in renal diseases or displacement of the kidney in carnivora is admissible, but to claim that the results will be as favorable as when performed upon healthy animals for experimental purposes would be misleading, as we have never had an opportunity to judge from our experience in that line, but our experiments upon healthy animals have been very encouraging. In case of renal diseases, the condition should be diagnosed as soon as possible to obtain good results ; if the patient is much depleted before, the operation would not be so successful, and in all probability the mortality would be much higher than when the animal is in good health ; yet, with all the discouraging facts that may be offered, when the operation is indicated no surgeon should neglect to relieve the condition by surgical interference. In many instances, when the cause of the trouble is due to cavernous tumors or hydatid cysts, temporary relief can be obtained from nephrectomy, but in such cases it is much better to remove the organ than to incise it. When the kidney contains multiple abscesses, it should not be incised but removed. To incise it properly in many cases the organ would be cut into many pieces, which would render the organ almost useless, even if all of the diseased portion is entirely removed.

When the kidney is affected with cavernous tumors, cysts or abscesses, the parenchyma of the organ is generally involved by the disease and usually greatly reduced in size, which impairs its functional activity and makes it almost useless ; and it is considered in all such instances advisable to remove the entire organ.

Neoformations.—New growths of the kidney generally require a removal of the entire organ to effect a cure. The following classification of neoplastic growths may be considered as indications for the operation in question :

(A) Growths of congenital origin :—

- (a) Sarcoma.
- (b) Hydronephrosis.
- (c) Cavernous tumors (angioma).
- (d) Renal cysts.

(B) Growths of adult origin :—

- (a) Extra-renal growths.

1. Tumors of adrenals.
2. Cysts.
3. Abscesses.
- (b) Renal pelvic growths.
 1. Pyonephrosis.
 2. Villous tumors.
 3. Carcinoma.
 4. Hydronephrosis.
 5. Sarcoma.
- (c) Cortical and capsular growths.
 1. Carcinoma.
 2. Sarcoma.
 3. Adenoma.
 4. Fibroma.
 5. Lipoma.
 6. Cysts.
 7. Tuberculosis.
 8. Secondary growths.

Diseases of the kidney of domestic animals is more common than it is generally accepted to be; and it is interesting to note to what extent they may be involved without being detected during life. Very frequently upon post-mortem, the kidney is found so diseased that it is almost useless, and in some cases they attain enormous size. Our observations lead us to this conclusion: that renal diseases are more common to young animals and very old ones, than to middle-aged ones. In young animals the most common conditions are sarcoma and hydronephrosis, while in old ones we usually find cysts, abscesses, pyonephrosis and secondary growths. We have often noticed animals with one kidney badly diseased and the other one perfectly sound, but the condition was never detected before the animal was slaughtered. Whether or not renal diseases are so common in the horse as in meat producing animals we are unable to state at present. In the past two years during the dissecting of equine subjects at this institution (McK. V. C.), we have noticed but two diseased kidneys; one had an abscess in the pelvic portion of the kidney, and the other a secondary growth in the cortical portion.

Renal Fistula.—A urinary fistula in connection with the kidney and ureter is an indication for nephrectomy; they may follow parturition, traumatic and surgical wounds, and in most cases break open in the direction of least resistance. When renal fistulæ open into the peritoneal cavity the termination is gen-

erally very rapid, if not treated surgically. Some of the conditions accompanying them may not require a removal of the kidney, but can be treated by another surgical method which we shall mention in connection with the surgery of the ureters.

Traumatic Injuries.—Severe injury to one of the kidneys of an animal may require a removal of the kidney; injuries to the ureters when located near the kidney may also be considered an indication for the operation, but if the injury is far enough from the kidney to permit an anastomosis of the ureter with its fellow, the kidney should not be removed. The subject of anastomosis of the ureter will be discussed in some future number of the REVIEW. Renal injuries accompanied by severe hæmorrhage calls for an immediate removal of the organ; if not removed the accumulation of blood in the bladder or urethra will prevent micturation. Injuries to both kidneys should not be considered an indication for nephrectomy.

Nephroptosis.—Dr. Jenner gave the first description of movable kidneys as observed in human subjects in 1869 (*British Medical Journal*). Since then the condition has frequently been observed in human patients, but in veterinary patients it is seldom diagnosed during life, although it is occasionally found when post-mortem examinations are made, and often when it is least expected. In human subjects about 80 per cent. of floating kidneys are found in women; 80 per cent. of all cases involve the right kidney; and, but 10 per cent. of all cases involve both organs. We are unable to find any statistics referring to domestic animals. The conditions may be caused by hypertrophy of one kidney as a result of disease, or an atrophy of the other one. Tumors are frequently associated with movable kidneys, but whether these cause dislocation by increasing the weight of the organ otherwise is difficult to state. Dislocation may follow absorption of circumrenal fat caused by disease that result in emaciation. The surgical treatment in nephroptosis should not be confined to removal of the kidney; some of these cases can be successfully treated by fixing the kidney (*nephrorrhaphy*).

Symptoms.—The principal symptoms by which renal diseases are detected are enlargements in the abdominal cavity and hematuria. In herbivora it is very difficult to diagnose renal tumors by manipulation, but in carnivora it is not so difficult. Hematuria exists in most of these cases, and at times the blood accumulates in the ureter, bladder or urethra, which

usually causes renal colics, marked by painful attempts to micturate (*vesical tenesmus*). The urine during intervals of hæmorrhage contains pus-corpuscles and tube casts. A correct diagnosis depends much upon the examination and analysis of the urine.

Pain, as a symptom of malignant growths of the kidney or renal diseases, is not always of sufficient intensity to add much to the diagnosis; but when it is severe it radiates from the kidney in the direction of the abdomen, loins, and extending to the thigh; this is manifested by the position of the spine and the gait of the animal; in renal diseases the lumbar vertebræ are usually curved (*lordosis*); no dependence can be placed in palpation to detect renal growths or diseases in herbivorous animals.

Mortality.—Mortality varies according to the nature of the disease; the highest percentage of mortality occurs in malignant disease of the kidney. In experimental surgery, nephrectomy is usually performed upon healthy animals and the result is generally very favorable.

Operation.—The kidney can be removed in two ways, viz. :

1. Lumbar nephrectomy.
2. Celio-nephrectomy.

1. *Lumbar nephrectomy* is performed without opening the peritoneal cavity. The patient should be prepared for the operation; properly cast, anæsthetized, and placed in the proper position. An incision is made posterior to the last rib in the direction of the ends of the transverse processes of the lumbar vertebræ.

When the external border of the psoas muscle is reached the areolar tissue between it and the peritoneum should be broken down with the fingers until the kidney is reached. If the incision is not large enough it can be enlarged by making one or two secondary incisions; the directions of these secondary incisions should be determined when the kidney is reached and its condition ascertained. If the organ to be removed is healthy the incision may not need to be enlarged, but if enlarged or adherent it may be necessary to make a number of secondary incisions to enable the operator to manipulate the kidney and ligate the vessels before it can be removed. These secondary incisions may be made in the direction of the external angle of the ilium and toward the posterior border of the last rib; in small animals the costo-iliac space may be too small to admit the hand if it is not enlarged in the direction of the external

angle of the ilium and the posterior border of the last rib. In every case the condition of the kidney should be ascertained before the incision is enlarged, and if the condition can be properly treated by nephrotomy it should not be removed; but if there is any doubt as to its efficiency; the proper method to adopt is to remove the entire kidney. The line of the secondary incision is not of much importance, any direction that will give the operator plenty of room will answer the purpose, providing that it does not enter the peritoneal cavity. When the incision has been enlarged and all hæmorrhage arrested the hand should be passed close to the capsule to separate it from the circumrenal fat; if adherent it may require the use of a knife or scissors. When the kidney has been loosened from its surrounding tissue, the blood vessels must be ligated; they may be ligated separately or in a body including the ureter. If the kidney is large, a temporary ligature may be applied and part of it removed in order to make room for the purpose to ligate the vessels properly. If it is possible to ligate them without including the ureter it should be excluded, and when the blood vessels have been substantially ligated the kidney should be removed by cutting the vessels at a safe distance from the ligature. The pedicle should be carefully examined and properly trimmed; the wound irrigated, all hæmorrhage arrested, and the incision closed and carefully drained.

Celio-Nephrectomy or Abdominal Nephrectomy.—The incision can be made along the linea alba or a little to one side of it, depending upon the kidney involved. The length of the incision should be about 10 cm., just large enough to admit the hand to make an examination; the centre of the incision should be near the umbilicus. The incision may be enlarged to suit the condition ascertained by the examination. The intestine must be kept to one side by the use of sponges; a small incision is made into the peritoneum over the kidney, which is enlarged with the fingers and the kidney separated from the surrounding fat. The ureter is ligated and cut, when the blood vessels may be ligated collectively and the kidney removed with a pair of scissors. The cavity must be thoroughly cleaned, and all the sponges and instruments removed. The operator must count all articles used for the operation before and after the operation. The cavity is closed as in celiotomy. The ventral incision is preferable in removing a floating kidney or an enlarged tumefied kidney. After-treatment is the same as in celiotomy. (See Celiotomy, Dept. of Sur., REVIEW.)

SURGICAL ITEMS.

Suturing Cutaneous Wounds.—Many veterinary surgeons who are successful operators often neglect to close their surgical wounds properly. The unsightly cicatrices that are left behind reflect upon the principle and practice of the operator. The principle that governs suturing is simple, and it is probably for this reason that this procedure is so often neglected. The direction of incisions may be straight, angular, arciform, elliptoid or sigmoid. Straight and angular incisions should be sutured so that the stitches form a right angle (90°) with the incision, excepting those that occur at the angle, and these should divide the angle into two equal parts. The stitches of an arciform or elliptoid incision should converge toward the centre of the circle or ellipse of which it forms a part of the circumference; sigmoid incisions should be sutured in the same manner, making the radii correspond to the direction of the curves. The application of stitches in minor surgery is a very important factor, not as a matter of dollars and cents,—sepsis and asepsis,—or life and death,—but as an example of the surgeon's good work.—(E. M.)

Ureteral Anastomosis and ureteral grafting have received much attention in consequence of the frequency with the ureter is involved in the operation of vaginal hysterectomy. Formerly the only hope that could be held out for the patient suffering from ureteral fistula after such an operation, was nephrectomy, but ureteral anastomosis and grafting bid fair to entirely replace this severe procedure.—(H. Morris, *International Jour. of Sur.*)

In Small Abdominal Wounds it is difficult to ascertain whether the peritoneum is perforated or not, but in no case should the wound be probed for this purpose. In order to determine the extent of the wound, the patient should be secured, and an incision made in the skin, passing through the wound, then incise the muscles one by one until the extent of the wound is ascertained, and the operator can then govern himself accordingly.—(E. M.)

Dr. W. J. Martin's Epispastic for Spavin.—Corrosive sublimate, one ounce; hydrochloric acid, one ounce; oil of turpentine, six ounces; gum camphor, four ounces; rectified spirits, forty-three ounces. Dissolve the corrosive sublimate in the hydrochloric acid and seven ounces of the alcohol. Mix the oil of turpentine, camphor and remainder of the alcohol, then add the two solutions together. Directions: Apply over the

hock once or twice daily for two to four weeks. Recommended especially where there is prejudice against more heroic measures.—(L. A. M.)

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By ADOLPH EICHHORN, D.V.S., New York City.

BAD RESULTS FOLLOWING NEURECTOMIES [*Dages*].—D. reports and describes several cases of neurectomies, which were followed by the bad results of sloughing of the horny capsule, etc., either due to traumatism or other unknown causes; but in spite of them he comes to the conclusion that in many cases neurectomy is a most valuable remedy in chronic cases to restore the usefulness of the animal. Of more interest to us is the accompanying discussion as to the cause or causes of the bad results following neurectomies. Nocard reports that out of the numerous neurectomies which he performed, high, low and often on both legs at the same time, the bad results following were not as often as those reported by Dages, and he also states that they are exceptions and are not to be described as the result of the operation, but to traumatism to the foot, which, not being sensitive, will not produce lameness, and which are as a rule discovered when it is too late. Furthermore, N. states that aside from this there is another cause to be considered, and this is the injury to the blood vessels which accompany the nerve. In this way a phlebitis is produced which may spread as far as the vein roots, with disastrous results. In consideration of these sequelæ, N. recommends the following precautions to be taken in operations upon nerves: (1) strict antisepsis; (2) carefully avoiding all injuries and exposure of the accompanying blood vessels; (3) giving perfect rest to the patient for at least a month after the operation. Liautard also states that out of the hundreds of neurectomies he had performed he did not observe any bad results. In opposition to this, Benjamin cites cases which in spite of the most strict precautions bad results followed. He especially disputes Nocard's views in reference to the theory of phlebitis, which is due to an infection, as in most of his cases, also in those followed by the bad results, he succeeded in healing the wound by first intention. Therefore, he cannot mark the neurectomies as an unhesitating operation.

Cagny agrees with Benjamin according to his observations.—
(*Bul. de la Soc. Centr. de Med. Vet.*)

ETIOLOGY AND THERAPY OF PARTURIENT PARESIS [*Schmidt*].—After enumerating the well-known theories as to the cause of parturient paresis, Schmidt advances and adopts the following thesis: "Parturient paresis is produced by toxic products of metabolism, which are formed in the colostrum milk, and are introduced into the juices of the tissues. To prove this assertion, S. states that milk fever may come on before or after parturition, but never before the beginning of lactation, and always only a few days after lactation began. Parturient paresis therefore is always in direct relation with the colostrum milk. The colostrum chiefly differs from the normal milk in containing considerably more protein substances, which entitles the assumption, that the formation of the toxins in the colostrum milk can be brought in connection with the great amount of proteids, and with the decomposition of these protein substances. The resorption of the decomposed products brings about the paresis and the ceasing of the secretion of the milk gland. The infusion into the mammae results in the following: (1) A washing out of the toxins and the colostrum milk; (2) prevention of the resorption of the toxins, and (3) stimulating the gland to secretion.—(*Wochenschr. f. Thierh.*)

IODIDE OF POTASSIUM IN CIRRHOSIS OF THE LIVER [*Huber and Eisen*].—The authors report 26 cases of this affection, of which 11 were treated with iodide of potassium. Out of those 11 cases, 8 recovered, one died from traumatic pneumonia after the symptoms of cirrhosis of the liver had almost disappeared. The two remaining cases were slaughtered. The treatment consisted of an injection of 30.0 grams of Lugol's solution, freshly prepared, repeated two, three or even four times at intervals of two or three days. A recovery may be expected, if after the injection a slight improvement in the sensorium is noticeable so that the patient will not submit to the second injection as quietly as when injected the first time. In one case after eight weeks there was a relapse of the disease, but the treatment was repeated and the animal recovered. These observations prove that good results are obtained from the use of iodide of potassium in this affection, and it is certainly advisable to give this form of treatment a trial. It is also very important that the patients be taken in time for this treatment, and furthermore never neglect to notify the owner of the symptoms of iodism.—(*Woch. f. Thierh.*)

FRENCH REVIEW.

FAST OF 40 DAYS IN A COW [*A. Liberge*].—A true case of autophagy, if it can be said, was observed by the author upon a fine Normandy cow which was in handsome condition. While at pasture one fine night it disappeared. Some forty days after she was found imbedded between three mows of straw, where she had fallen. She was still alive. Her lips were stuck together by mucus dried on their borders and the buccal entrance was completely closed. The straw which surrounded her being removed, she was found, almost standing up, in an excessive condition of emaciation; her abdomen tucked up, and behind her was a small quantity of fæces, showing that her abstinence had been almost complete. She was with difficulty removed to a barn, where with care, milk diet, etc., she gradually recovered.—(*Rec. de Med. Vet.*)

AN ENORMOUS EGAGROPILE IN THE HORSE [*L. Colin*].—Returning from military drilling work a mare was taken with violent colics, during which she assumed most peculiar positions: dog sitting, dorsal decubitus, etc. The colics lasted for two days and at last the mare died. At the autopsy a hard, enormous mass, free of any attachments and easily displaced, was found in the diaphragmatic curvature of the large colon. It was formed by an agragopile as big as a child's head; it was smooth, nearly spherical, not adherent to the intestines. It was brown in color and had the appearance of a coarse felt, formed of hairs glued together; it weighed 1800 grammes.—(*Rec. de Med. Vet.*)

SUGAR IN MOIST DERMATOSIS OF THE DOG [*R. Bissauge*].—To satisfy himself of the therapeutical value of sugar, recommended by some in both veterinary and human medicine, the author has used it in wounds of the knee, in diseases of the eye, principally of the cornea, etc., but where he has obtained the most satisfactory results is with the moist dermatosis of dogs—such as impetigo, ecthyma, eczema, etc. Mr. B. has used sugar with these, either alone or associated with other substances, and has obtained very good results. The following are some of the preparations he has resorted to: Oxide of zinc and powdered sugar, equal parts; lanoline and vaseline, 20 grams of each; sugar and oxide of zinc, of each 15 grams, 2 or 3 applications a day; oxide of zinc and sugar, of each 15 grams; gelatine, 25 grams, heat it and apply with a brush. For rebellious cases he uses: Tannin or salicylic acid 2 grams, pow-

dered sugar 5 grams, vaseline 40 grams ; or calomel and sugar, of each 3 grams, lanoline 30 grams ; apply four or five times a day. Internal treatment of bicarbonate of soda, arsenic preparation, etc., is, of course, also to be recommended.—(*Rec. de Med. Vet.*)

ATROPHY OF THE SEMIMEMBRANOSIS AFTER CASTRATION [*By J. Monsarrat*].—Having a horse to castrate the author threw and secured him in the ordinary way, but had a great deal of difficulty in bringing the right hind leg on to the shoulder, on account of the stiff condition in which the horse held the leg. The operation was successful and the cicatrization was complete in fifteen days. Two months later, however, the very marked emaciation of the semimembranosis was called to his attention. No treatment was applied, exercise only prescribed. The muscle returned slowly to its normal size, but it required several months for it. This is a peculiar complication of the positions in which animals to be castrated are sometimes submitted, and to avoid it the author recommends the dorsal decubitus, which is already resorted to by many veterinarians.—(*Rec. de Med. Vet.*)

A CASE OF POLL-EVIL IN THE HORSE [*By A. Morey*].—This horse had a fall in which his head struck heavily on the ground, leaving at that time only a slight excoriation, which healed rapidly, but was followed by the appearance of a large soft tumor. The horse was notwithstanding kept to work, and it was after he had several attacks of vertigo and partial loss of motion that the owner asked for advice. The swelling was evidently purulent and was allowed to escape by a free incision. To explore the cavity of the abscess it was necessary to cast the patient, and on examining, extensive necrosis was detected, with a loose piece of the occipital bone floating in it, and, rough and irregular, it measured some twenty-one centimetres square. Free counter openings, frequent washings with solution of sublimate, 1-1000, allowed the animal to resume work in less than three weeks.—(*Journ. de Med. Vet. and Zoötech.*)

CUTANEOUS PAPILLOMAS IN A HEIFER [*By M. Mathin*].—When this heifer was brought to the attention of the author both fore legs were terribly affected. On the left, the tumors occupied the posterior and lateral parts of the knee, of the tendons and of the cannon ; forming a mass of horny papillæ of various sizes, with here and there pedicles, giving in some places the appearance of an artichoke, in others that of a chry-

santhemum. On the right leg the general appearances were about the same, although perhaps not so extensive. The hind legs, the trunk, the shoulders, neck and the head presented also patches more or less developed. Some of these tumors were intact, others were excoriated and bleeding. The animal was much annoyed with flies and suffered with constant itching. A form of treatment recommended by Professor Degivé, consisting in the administration of carbonate of soda, internally, was tried with so little result that the old mode of treatment was resorted to. This consisted in tearing away the tumors which held loose and amputating the others with elastic ligatures. The entire surfaces were dusted with the powder of Knauss and coal tar. The action of the coal tar brought out lots of larvæ of flies, which before resisted carbolic acid lotions. With this treatment, after twelve or fifteen days the growths began to fade and after a little over two months the animal was discharged.—(*Journ. de Med. Vet. and Zoötech.*)

CORRESPONDENCE.

THE ILLINOIS BOARD OF VETERINARY MEDICAL EXAMINERS
—DR. SWAIN REPLIES TO DR. ROBERTSON.

DECATUR, ILL., Jan. 1, 1901.

Editors American Veterinary Review:

DEAR SIRs:—In the November number of the AMERICAN VETERINARY REVIEW, page 636, there appears an intellectual monstrosity painted by the pencil of Dr. James Robertson, D. V. S., member of the Illinois State Board of Veterinary Examiners, wherein the Doctor seeks to extricate himself from a very painful and peculiar dilemma in which he is placed by a published arraignment of the board's official conduct by the committee of the Illinois Veterinary Medical and Surgery Association.

This committee did not shirk its responsibility, nor deal in terms of maudlin sentiment; but, as honest and earnest men, inspired by a high sense of duty to their profession, proceeded at once to investigate a state of facts so revolting, that a solemn sense of duty bade them decide to cauterize and clean out this foul and offensive excrescence calling itself "The State Board of Examiners." We have no option, but are driven to this duty because of dereliction of duty and flagrant violation of law, amounting almost to malfeasance in office. From the Doctor's

affected, inflated, sonorous and high-sounding style in defensive reply to our published report, the profession may readily gauge the intellectual and logical force of even this guileless graduate to successfully defend himself and his board when "weighed in the balance and found wanting." The doctor's defense is a sad surprise to us, coming from a source so eminent, as it furnishes us neither literary flowers nor any sort of fruit. It actually reminds us of Grover Cleveland's report to Mrs. Henry Ward Beecher with respect to his moral conduct, which was cunningly constructed, but when rightly reduced to the last analysis it was found to be one-half alibi and the other half confession. But if I may presume to further characterize the Doctor's contribution, it seems to be entirely innocent of ideas, of clearness, conciseness and classic culture. It is weak and wandering, murky and muddled; it is in the right road only when crossing it, and no sane man can decide what he is aiming at, which side it is on or which way it is going. It reminds us of the Irishman who followed the winding trail of a serpent till it entered its den, and then in bewilderment, Pat declared that:

"It so wriggled in and wriggled out
That it leaves the observer much in doubt
Whether the snake that made the track
Was coming out or going back."

The truth will appear to all who read the Doctor's defense, that his sympathetic heart and his avarice are entirely too much for his judicial head and sense of moral responsibility. He depicts the old illiterate moss-back practitioner coming before his board, ignorant of even the rudimentary principles of the science or art of our profession, and yet the board arms the incompetent with a license to prey upon the public and inflict infernal torture upon dumb beasts, because the applicant is poor in purse, burdened with children, and because he has the fee. Sentiment and twenty silver dollars too often sway the effeminate and unworthy official, but the stalwart soul feels that duty is the grandest word in this world. If delegated to perform a sacred duty, sentiment is utterly out of place. If placed upon the picket line facing the enemy, the officer has a plain and positive duty to perform, and against the law laid down for his guidance he is held to be criminal if he exercises any option or is influenced in the least by sentiment or sympathy or silver, as to whom he shall wrongfully let pass through his lines to the injury of the confiding body of nobler men behind him. A man who is thus honored with an important position of *trust*, must not prostitute it! It is criminal! The Doctor does not

deny that he ever rejected an applicant! Think of it! And because our committee complain of this outrage, there comes creeping out from under the murky cloud of his article, a seething, hissing sneer at us as "non-graduated." Is that his only or his best defense against our just and righteous arraignment for his flagrant violation of the law?

Now, Mr. Editor, upon this point which the Doctor brings forward, let me suggest to him a little common sense. I say only a little, as his head is evidently incapable of holding very much. Whenever a diploma is conferred by a veterinary college upon a man of studious habits, of sterling integrity and sound common sense, and when that diploma has been well and worthily won and is thus an actual evidence of the owner's education in his profession, *then*, and only then, can I consent to uncover my head before a collegian with his sheepskin. But, when a diploma is prostituted to unworthy work, when it is regarded and flaunted before our face, not as a *help*, but as the *whole thing*, when it is used as a cloak to cover up absolute incompetency, as in the case of his eminence at whom this article is aimed, then a diploma becomes a dishonor, a degradation, and an actual curse. It dishonors alike him who has not sense nor culture enough to worthily hold it and the college and profession that conferred it. "I hope upon this point I am clearly understood."

And, sir, permit me to say, as respects myself, that "the crime of being a non-graduate," I shall neither attempt to palliate nor deny. In simple ignorance, I would be your equal not to know that I am the man at whom you aim this harmless blow. But in order to oblige you, I may say I wish the fact known amongst all men that I am a non-graduate; my place and position in my profession enables me to be thus independent of artificial aid. So, let it be placarded on our banners as I walk the Golden Streets of the New Jerusalem with the great body of the very best and brainiest men of our profession, and I wish it heralded all over Hell, where all dishonest doctors, incompetents and quacks are sure to hear it. But, my dear sir, wherever you hold aloft your diploma, we will run up over it the scalpel and the skeleton; these, I prefer, shall suggest the source of my proficiency in the profession, for I have yet to find a good veterinary surgeon who is a poor anatomist, nor have I ever seen a poor surgeon who is a first-class anatomist. It makes no difference where a man studies—whether in the woods or in a cabin, or in a castle or a college—but, to be

a physician and surgeon he must *study* and be blest with a sound mind in a sound body, with an honest heart and a cool and clear head, for genius never stamps her image on common clay. I deprecate and denounce the Doctor's effort to disparage the non-graduate, for a man may be vastly more learned and efficient without a diploma than others who have them. Does he not know that when the great Daniel Webster received his diploma he tore it in shreds and said, "My energy and industry may make a man of me, but this miserable parchment never shall." Elihu Burritt, the learned blacksmith, acquired thirty-two different languages while working with his book before him at the forge. But, do not understand me that every blacksmith has the brain of Elihu Burritt. Robert Burns and William Shakespeare have swayed the world with their sublime poetry for two hundred years, and Abraham Lincoln, in every sense the equal of Moses and Solomon, were not only non-graduates, but they never even went to school. I cite these few from among the millions that I might, for the purpose, if possible, of shedding a ray of light into the dim and dark understanding of the Doctor's murky mind. Let it be understood that no one can honor an educated collegian more than I, but they have their peers among the great army of able men without diplomas. We are all students and workers alike in one cherished common cause, and the distinctions, such as the Doctor assumes, are not only injurious and odious, but can only emanate from a very little man with a very shallow mind.

Thus far we have curried the Doctor and his Examining Board with softest silk, but we must now come to something more specific, and which fully sustains the worst we have said.

In the city of Mattoon, Illinois, at the semi-annual meeting of the Illinois Veterinary Medical and Surgical Association, in the month of August, 1900, and before a well attended meeting, there being present visitors of eminence from the Illinois State Veterinary Medical Association, appeared an applicant for membership in our association, who had successfully passed the requisite examination before this State Board of Examiners. He appeared before our committee, and we proceeded to give him the usual examination. The questions put to him in anatomy, physiology, pathology, surgery, materia medica and obstetrics were primary and of the simplest sort, and to our utter amazement the man failed to answer a single question. When asked to locate the inferior maxilla, he was unable to do so, nor could he give the number of incisor or molar teeth, nor locate

the tarsus nor metacarpal bones. He could not locate any section of the vertebra nor even the coccix. He was ignorant of the number of costals. He knew absolutely nothing of anatomy, physiology, pathology, materia medica, symptomatology, therapeutics nor surgery, and yet this man was graduated by this State Board of Veterinary Medical and Surgical Examiners to practice veterinary medicine and surgery in the State of Illinois. After being rejected by our committee, he came before and was questioned by the association, including Dr. W. J. Martin and Dr. N. P. Whitmore, of the Illinois State Veterinary Medical Association, and numerous others, to whom he declared that he had passed the requisite examination before the State Board and that he had their permit to practice in his pocket. He stated the board asked him the following questions: Are you married? How many children? What are you worth? How long have you practiced? If he could castrate and spay, and was questioned principally on these latter, and he declared it as his belief that the board sought to secure his methods of spaying and castration. We had some doubt on these points, but finally he convinced us. Their first demand on him, he said, was the fee of twenty dollars. He asked that in case of failure in passing, if they would refund the fee? They said: "No, but that need not disturb him because he would pass beyond all question." And *he passed*.

I will cite only one other case from any number I might, who passed this brilliant and benevolent Board of State Examiners. A gentleman who was demented and detained in the insane asylum, was let out on parole, and while in the bold flights of an extravagant fancy he conceived the idea of taking out license and entering upon the practice of veterinary medicine and surgery. He went before this State Board of Veterinary Examiners, was vigorously protested by Dr. Martin and others, but he furnished the fee of twenty dollars and passed the board successfully. Now I would respectfully appeal to the profession at large, if this committee were not justified in its published criticism of the board's official conduct and in asking for its removal from office; and to the Doctor himself, let me say in all kindness that, although a non-graduate, I hold myself equal to meet with overwhelming facts anything further he may care to offer, and for the present will only add,

"Lay on, Macduff, and damned be he who first cries hold, enough!"

S. H. SWAIN, V. S.

THE SURGICAL CLINIC AT THE MEETINGS OF THE AMERICAN
VETERINARY MEDICAL ASSOCIATION.

MANHATTAN, KAN., January 20, 1901.

Editors American Veterinary Review:

DEAR SIR:—I had hoped that your editorial on the above subject and your invitation to your readers to use the columns of the REVIEW for its discussion, would bring out numerous suggestions from those who in the past have chiefly exerted their energies in private adverse criticism, rather than in lending their aid to correct the defects which have displeased them. In the December REVIEW, a writer expresses his disgust at the conditions under which an operation was performed at one of these clinics, and then proceeds to relate how he performs the same operation. After a perusal of that description, I am free to confess that unless he possesses more skill in performing the operation than in describing it, it is my judgment that the operation which excited such disgust in him, would probably result more favorably to the patient than one which he would perform in his "appointed operating room."

I yield to none a keener appreciation of the advantages of aseptic surgery, but a practitioner who adopts a plan "which can be followed out only in an appointed operating room," is, in my judgment, about as useful in ordinary practice as an Eastern dude or tenderfoot in a Western mining camp.

There is no longer any question or doubt as to the usefulness of antiseptics and cleanliness, but it should not be forgotten that asepsis is not the "whole thing" in operative surgery; manual dexterity or manipulative skill is equally important, if not more so.

The average, or, in fact, the most careful veterinary practitioner is unable to obtain ideal conditions in his everyday practice. He may have a correct appreciation of the importance of aseptic surgery, but his practical common sense and experience tell him that in order to meet the requirements imposed by the conditions of an ordinary country practice, he must possess something better than the ability to operate in a "properly appointed operating room." He must needs operate successfully with the best appointments possible under the conditions he is forced to meet, and not under such conditions as he might desire. The professor and the city practitioner sometimes tell us they will not operate unless the conditions are "just right," but the country practitioner who adopts that plan usually goes back to the college to teach veterinarians how to successfully (?)

meet the requirements of a general country practice, or goes out of the profession entirely, because it does not offer sufficient scope for the exercise of his genius.

The men who take most interest in these clinics will appreciate ideal conditions of environment, but they will also appreciate the difficulties of obtaining these ideal conditions, and will consequently be willing to overlook defects in such matters, but they will not tolerate "bungling" or lack of dexterity in technique.

Let those who feel it their duty to criticise (and it is an honorable duty) not ask too much in the matter of "appointments," but they may justly demand fair skill in the operators. However, it may not be out of place right here to state that "speed" is not skill in all cases; in fact, the most rapid operators are frequently the least skillful.

It seems to be pretty generally conceded, so far as I have been able to ascertain, that your suggestion to set aside one half day for the clinic is desirable, but in the past the difficulty in obtaining expert operators, who would perform the operations they had agreed to, has been the greatest one with which the local Committee of Arrangements has had to contend. Very few men are sufficiently versatile to be able to perform a number of operations with the greatest skill, but many ordinary general practitioners are experts in say one or two particular operations, and are, therefore, much more desirable as operators at our clinics than the man who performs all operations fairly well, but has not attained marked skill in any one. Almost every member of the profession knows at least one man who has unusual ability to perform at least one operation. Those who do know such a man should not fail to place that information in the hands of the local Committee of Arrangements.

Two experts should be selected for each operation scheduled, who will give unqualified promises to attend the meeting and operate. One may perform the operation and the other assist in case both are present. In the absence of one, the other is to operate, but if both should fail to appear, the operation should be omitted entirely, unless the committee is certain a skillful man can be obtained to perform it. In this connection it may be said that volunteers are not desirable. They usually have one of the qualities of a good operator, but frequently none of the others.

Again, it seems to me a very few operations well performed are worth much more than a large number indifferently executed.

Few of us realize the difficulties to be overcome before a perfectly organized and appointed clinic can be held, and we are therefore inclined to expect too much. Let us be reasonable in our demands. The clinics held in the past, notwithstanding all their defects, have in my judgment done much good, but I shall be very greatly mistaken if our friend Lowe and his colleagues do not give us, at our 1901 meeting, the best clinic we have ever had.

Yours respectfully, TAIT BUTLER.

"RANK" IN THE ARMY OF THE UNITED STATES.

WINSTON, N. C., December 25, 1900.

I notice among the oppositions to the veterinary part of the army amendment that some Senator said "he would not have his son, who is in the army, rank with a veterinarian."

Now, I want it understood that I am not trying to create the impression that the Senator is not rank, for evidently he is in his statement, but I would suggest one way for his progeny to rank as high as the veterinary profession is for him to set high examples, make broader and more manly statements and teach his son to stand on his manhood and merits and not to retard the advancement of the veterinary or any other humane calling. The Senator seems to have out-ranked himself and people of his real rank and gotten into the Senate ranks, and his son was able to rank as an officer in the standing army probably because his father ranked in the Senate, and when such rank misrepresents the sentiment of all the best people of this country are shown that their rank is out of the Senate or are outnumbered in the Senate by men of real rank, we will see our poor army horses that have to carry these rank Senators' rank sons to fame, cared for in a scientific and humane manner, and the man who is talented and equipped and passes an honest examination, even though his father is not so rank as the Senator, will stand as high in army ranks, and does now stand higher in true patriotism, bravery, intelligence, greatness, humanity, civilization, and in the eye of an Almighty God than a boy who gets his ranking because his father is rank and has a "pull," or should he attain his rank himself, there is nothing in the army ranker than a real, ideal veterinarian.

They are called upon day and night, Sunday and holidays, to perform the duties of one of the noblest callings on earth, and expose themselves and their lives to dangers that no army private or officer, even in the history of the world, were called upon to perform and face.

We have heard of all kinds of guns, etc., and the accuracy of gunners, and all the horrors of war, which does require some bravery to face, but think of the determination, accuracy of aim and surety of injury or death and the certainty of action of a mule and his heels and the amount of true bravery one must possess to volunteer *for life* to face this and so many hazardous surroundings daily, for what? Not for pay or honor, for no veterinarian is overpaid and gets no honor at all; so it must be for the love he has for the poor dumb animals we have taken their liberty from and made lifetime slaves of. Creatures that are in principle just what they are, and rank higher in usefulness and faithfulness to mankind and civilization than a Senator or any one else who would endeavor to keep the Government from putting men of real rank and competency in proper position to protect them, for they have for centuries been the subject of shameful quackery and have won many victories for our Government and honors for the rankest of the rank.

In conclusion, I wish to say that even the Senator is not the rankest thing on earth; he responds as a schoolboy to the tap of the hammer—Order—from the Chair; and his voice is hushed and his rank is dead in the Senate Chamber. His vote is vetoed by the President, to all of which he must submit in obedience to higher rank. The Senator's son in the army must respond to higher ranks and obey their orders right or wrong. The *true* veterinarian responds only to the calls of mercy from the dumb animals and obeys *only* the laws of God in administering to the needs of the same.

J. W. PETTY.

OBITUARY.

CHARLES BURDEN, D. V. S.

What may be termed the "Old Guard" of the American veterinary profession has suffered the loss by death of one of its most prominent and honored members. Charles Burden has been for more than thirty-five years a bulwark of strength and an unflinching exemplification of all that stands for high principles, noble character, and purity in professional and private life, and deep will be the grief of those who knew him when the sad tidings of his sudden demise shall strike their eyes. Dr. Burden, while not in robust condition, had been in his accustomed health until Friday morning, Jan. 25, when he was suddenly stricken with apoplexy while arising from sleep, and died during the day.

He was born in London, England, May 6, 1833, coming to America when a young man, and engaged in the practice of veterinary medicine in partnership with the late Dr. E. Nostrand. In 1866 both he and Dr. Nostrand entered the New York College of Veterinary Surgeons, at 205 Lexington Ave., New York City, Dr. Nostrand graduating in 1867, and Dr. Burden the following year. It is related that in his last year at college he had the distinction of forming the entire class, to whom regular lectures were given by quite a large faculty, he graduating in the spring of 1868. He immediately resumed the practice which he had formed as a non-graduate, and enjoyed for many years a large and lucrative business. Before there was a college in this country to give him his coveted veterinary training he was active in the advancement of the profession, having been a charter member of the United States Veterinary Medical Association, its Secretary from 1865 to 1867 and its Treasurer for many years. When the American Veterinary College was established his sympathies and support went with it, taking an *addendum* degree from that college in 1876; and he was ever loyal to his alma mater, serving as an alumni trustee for a number of years, and no movement looking to her welfare ever occurred that Charles Burden was not a leading spirit. A Christian gentleman, charitable and sympathetic to a fault, modest and unassuming, his was a noble life, an adornment and an example to his calling, and his place will be hard to fill. The death of a beloved son about five years ago was a serious blow, but there survive him his devoted wife and a son who was at the time of his father's death serving as a Government civil engineer at Santiago, Cuba. The funeral occurred at his late residence, 216 East 52d Street, New York City, Jan. 27.

BIBLIOGRAPHY.

LABORATORY DIRECTIONS FOR BEGINNERS IN BACTERIOLOGY: An Introduction to Practical Bacteriology for Students and Practitioners of Comparative and of Human Medicine. By Veranus A. Moore, B.S., M.D., Professor at the New York State Veterinary College. Second Edition, revised and enlarged. Boston: Ginn & Company.

Dr. Moore's little brochure first appeared in 1898, and the call for a second edition has followed so closely upon its introduction that its appreciation has been well pronounced. Bacteriology has taken such a commanding position in the practical work of the veterinarian, that he who ignores its teachings or practical application is virtually without a place in advanced

veterinary medicine. To those of our profession, therefore, who were unfortunately without adequate instruction in this important branch during student life, and to all others who wish to pursue the investigation of the many diseases of bacterial origin, the work of Dr. Moore will be found invaluable. Beginning at the very root of the subject, with a list of the materials necessary to start the work, he carries the reader on through some sixty-four exercises to the study of the microorganisms of most diseases of animals and man. The instructions under each exercise are full, specific, and clear, and by an intelligent adherence to them a person with some knowledge of the subject can pursue investigations with success.

The reputation of the author is world-wide in the field of which he treats as a thorough and earnest investigator, with large experience and much ability, and his contributions to comparative pathology have been of so high an order that this latest volume will take its place as an indispensable addition to our literature, and the veterinarian's library will fail to be complete unless it contains this work.

PHYSICIANS' MANUAL OF THERAPEUTICS, Referring especially to the Products of the Pharmaceutical and Biological Laboratories of Parke, Davis & Co. Flexible morocco: 12mo. 256 pages: Detroit, 1900.

To modern pharmacy, and especially to modern manufacturing pharmacy, we are indebted for many of our most useful remedial aids. Without the valuable coöperation of such a vast and thoroughly equipped establishment as that of Parke, Davis & Co., for example, the medical profession might be most inconveniently handicapped.

This work may be conveniently carried in the pocket or, being handsomely bound in flexible morocco, it may be permitted to ornament the office desk of the practitioner.

To quote from the preface, "the purpose of the work is to place before the prescriber a means of perceiving at a glance all the available forms or pharmaceutical preparations of any drug now in vogue." No secret combinations are referred to; in every case the precise formula is given and in most instances the dose is appended, for obvious reasons. The "Therapeutic Suggestions" bear evidence of careful preparation and the list of diseases and symptoms is as nearly complete as practicable in a book of this kind. Various useful tables follow, while the bulk of the work is made up of the section of *Materia Medica*. This is a complete catalogue of drugs in general use, alphabetically arranged, a plan which renders the task of finding a rem-

edy an easy one. Under each caption is then arranged, alphabetically also, a list of all the preparations made by the firm containing the drug to which the caption refers. The list of preparations of certain standard drugs is sufficiently long to enable the prescriber to meet the most exacting conditions by a choice therefrom. For example, those containing aloes occupy eight pages; those of arsenious acid, five pages; the iron preparations, nineteen pages, and so on.

We advise practicing veterinarians to procure this excellent book, which can be secured free of charge upon application to P., D. & Co. That it has been carefully prepared is evident to the reviewer; it is singularly free from errors and it is durably and handsomely bound.

U. S. ARMY VETERINARIANS.

The following is a list of the veterinary surgeons and the regiments and stations to which they are assigned:

1st Cavalry—Coleman Nockolds and W. Going, Manila, headquarters and two squadrons, one squadron in United States.

2d Cavalry—W. V. Lusk and W. Grutzman, regiment in Cuba, headquarters at Matanzas.

3d Cavalry—O. Schwarzkopf and S. L. Gelston, regiment at Manila.

4th Cavalry—A. Plummer and A. McDonald, Philippines, headquarters at Pasay.

5th Cavalry—G. E. Griffin and A. Mitchell, regiment in United States, headquarters at Fort Myer, Va.

6th Cavalry—S. L. Hunter and D. Gilpin, headquarters and one squadron Manila, one squadron at Peking, China, one squadron *en route* to Manila.

7th Cavalry—D. Le May and F. Foster, regiment in Cuba, stationed at Havana.

8th Cavalry—R. Stanclift and R. Corcoran, headquarters and two squadrons in Cuba, one squadron in United States, headquarters Puerto Principe.

9th Cavalry—S. Glasson and J. Tempany, headquarters and two squadrons at Manila, one squadron in United States.

10th Cavalry—C. D. McMurdo and S. Service, headquarters and two squadrons in Cuba, one squadron in United States, headquarters Manzanillo.

SOCIETY MEETINGS.

VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY.

Had any veterinarian in the State of New Jersey an impression that the amalgamation of the three State societies, which was accomplished just one year ago at the meeting in Newark, was not complete and that the veterinary forces of the State were not united in a loyal and unselfish purpose, attendance at the meeting, held at the State Street House, Trenton, on the 10th day of January, would have banished from his mind all doubt or question. Although the day was dark and stormy, in fact, one of the most disagreeable of the year, the attendance and spirit of the meeting were most gratifying, the attendance being upward of forty and the fraternal feeling exhibited by every man such as to be long remembered. Another indication of prosperity was the application of 12 men for membership. Messages were received from four members who were detained at home on account of sickness or death of friends or relatives. Among this number was the President, Dr. Hurley, of Hopewell, and in his absence the First Vice-President called the meeting to order. The principal business of the day was the report of the committee on revision of the constitution, by-laws and code of ethics.

The committee presented a revised constitution. The Board of Censors' constitution for the government of an organization was a matter of extreme importance and accordingly each article was taken up separately and carefully considered, the greater portion of the session being devoted to the settlement of questions which arose relative to the advisability of certain changes. All questions were discussed in a most kindly manner and the revised constitution was finally adopted to the satisfaction of all present.

Following the adoption of the constitution occurred the election of officers for the ensuing two years. Dr. T. Earle Budd, of Orange, in the following well chosen words nominated Dr. Wm. Herbert Lowe, of Paterson, for President :

Mr. President and Gentlemen : Our attendance to-day is an expression of our loyalty to our former societies and a belief that this society, in the future, will exert a wider influence and will foster in each member a desire to regularly attend its meetings and by thought and interest will put this society and the profession itself in the ranks to which it belongs—second to none.

In presenting the name of one who will be the President of our New

Jersey Veterinary Society for the coming two years, I shall present one to you who has been weighed in interests of our society and the veterinary profession and not found "wanting." I will present one who has held positions of trust for our Government for eight years, and when his place was filled by others it was a record he left that his successor would be willing and glad to follow and the veterinary profession proud to point to. He now stands the treasurer of our American Veterinary Association.

It is also his untiring zeal and unremitting effort that has taken our weak and ineffective societies and merged them into a body that is to be known as the New Jersey Veterinary Medical Association, a society which will be effective in its work, an advance to our profession and a help and stimulus to each of its members.

It is also due to his efforts that we are to have the honor of having the National Society meet in our State next September.

Gentlemen, it is, I think, an honor that to-day, in this the beginning of our new century, we have the privilege of making Dr. William Herbert Lowe our President, whose name I bring before you. Personally I feel it an honor to present the name of Wm. Herbert Lowe, of Paterson, as the President of the New Jersey Veterinary Medical Association for the years of 1901 and 1902.

Dr. Lowe was elected by a unanimous vote, was escorted to the chair and delivered the following inaugural address, which we wish might be read by every veterinarian in our land.

PRESIDENT LOWE'S INAUGURAL ADDRESS.

Fellow Members:

I rejoice in the complete unification of all factions of the profession in this State harmoniously, and triumphantly, accomplished during the closing year of the old century.

With the obliteration of all factional differences, and with a common interest and a common devotion to a common cause, the possibilities and prospects for advancement along broad and advanced lines, in our science and art, are almost illimitable. Like every great movement there had to be some individual sacrifices made, but those sacrifices made for the common good of the profession, have strengthened the ties of friendship and mutual respect such as nothing else could.

By your voice, and with your vote, you have seen fit this day to confer upon me the unique and distinguished twofold honor of being the first President-elect of the amalgamated association of the State of New Jersey, as well as the first President of the New Century.

This is indeed an honor that any man in the profession might feel proud of, but the thought that is uppermost in my mind at the present time is that the responsibilities and opportunities of the executive officer of the Veterinary Medical Association of New Jersey, as now constituted, are infinitely greater than has ever before fallen to the lot of any veterinarian in our State.

The progress of this association must ever be along scientific and broad lines with a constant view to applicability and practical usefulness. Nothing short of this will satisfy the veterinary practitioner of the twentieth century. How well this shall be accomplished, in New Jersey, depends largely upon you. Your President will outline and

direct various lines of investigation and organized work, but the success of his administration will depend, in a large measure, upon the earnest and loyal support that each member gives him in his official capacity. Let each member do his part well, whether it be much or whether it be little, and the result will be simply marvelous.

Less time must be spent in the transaction of routine business and more time devoted to the consideration of the scientific and practical problems of our profession. Busy practitioners will not leave their practice and come to our meetings, unless they profit by coming. We must make the meetings so interesting and instructive that practitioners cannot afford to be absent. Then the association will be a success.

Another thing, be broad and liberal minded. Things will occur at our meetings that you, individually, do not approve of. Do not get disgusted and stay away from the next meeting, but, on the contrary, be sure to come and do your part to correct what you believe to be wrong.

Then, again, do not stay away from meetings of the State association because there are some members that you do not like or that you do not consider well qualified. You can associate with those who are congenial, but above all remember that those who are less competent than you need the benefit of the organization more than those who are better qualified.

Two very important committees are created by the new by-laws adopted to-day. The breadth, scope and practical value of the work of these committees to the public are, so far as I know, in advance of that of any similar committees anywhere in existence.

It is made the duty of the Public Health Committee to investigate, advise and report on animal diseases, animal foods, sanitation and other matters relating to and concerning the public health. The importance and value to mankind of the work of this committee alone, if intelligently conducted, cannot be estimated.

The other important committee that I refer to is to be known as the Animal Industry Committee, which shall investigate, study and report on all practical problems and questions relating to the breeding, maintenance and utilization of animals with a view of fostering and placing animal husbandry, in all its phases, upon a more scientific, economic and profitable basis in this State. Many associations have committees on diseases and on contagious diseases, etc., but sight has been lost, in many instances at least, in the practical value of a scientific application of the physiological laws governing the animal industry. This phase of this important subject has been left almost entirely to the layman to manage the best he could. No wonder the public should have a restricted idea of the veterinarian, and no wonder that a newspaper reporter should say that he did not think that an account of the meeting would interest the general public. I agree with him that the routine proceedings would not interest the general public, but I know at the same time that if the association was doing the work that properly comes within its scope that there would be much that the newspapers would be looking for. We as a profession are not in close enough touch with agricultural, live stock, dairy, public health, sanitary and kindred associations and boards. Our members should meet with organizations of this class and their members should be encouraged to meet with us.

The establishment of these committees inaugurates two inexhaustive fields for the progressive veterinarian. There will be plenty of work in the future for many veterinarians in connection with breeding, maintenance and utilization of animals, even if there should be no sick ones to treat. Then, again, there remains for the veterinarian much to be done in preventive medicine and sanitary science that will be a boon to the human family.

Gentlemen, I thank you.

Other officers elected were: First Vice-President, Dr. T. Earle Budd, of Orange; Second Vice-President, Dr. J. O. George, of Camden; Secretary, Dr. George W. Pope, of Garfield; Treasurer, Dr. B. F. King, of Little Silver.

A vote of thanks was extended to the retiring officers who had borne the heat and burden of the day. Special mention is here made of Dr. Lockwood, who retired from the secretaryship after a faithful service of seven years.

Dr. W. Horace Hoskins, of Philadelphia, made a flying trip to Trenton in the afternoon, and by his presence and a few timely words of cheer and encouragement added to the inspiration of the day.

At 6 P. M. the meeting adjourned to meet in Newark in July.

GEORGE W. POPE, *Secretary*.

President elect Lowe announces the appointment of the following committees and delegates:

Executive Committee.—Dr. Wm. Herbert Lowe, Paterson, Chairman; Drs. Geo. W. Pope, Garfield; T. E. Smith, Jersey City; John B. Hopper, Ridgewood; James M. Mecray, Maple Shade; L. P. Hurley, Hopewell, and S. S. Treadwell, Englewood.

Public Health Committee.—Dr. Werner Runge, Newark, Chairman; Drs. G. P. Harker, Trenton; J. V. Laddey, Arlington; Whitfield Gray, Newton; L. R. Sattler, Newark.

Animal Industry Committee.—Dr. J. Payne Lowe, Passaic, Chairman; Drs. R. R. Letts, Jersey City; W. F. Harrison, Bloomfield; John B. Finch, Ramsey, and James W. Hawk, Newark.

Legislation Committee.—Dr. T. Earle Budd, Orange, Chairman; Drs. A. G. Vogt, Newark; Wm. B. E. Miller, Camden; T. E. Smith, Jersey City, and Dr. Henry Vander Roest, Newark.

State Committee on Atlantic City Meeting.—Dr. James T. Glennon, Newark, Chairman; Drs. John O. George, Camden; E. L. Loblein, New Brunswick; E. R. Voorhees, Somerville, and J. Payne Lowe, Passaic.

Finance Committee.—Dr. R. O. Hasbrouck, Passaic, Chairman; Drs. Ernest Buckley, Orange, and D. J. Dixon, Hoboken.

Publication Committee.—Dr. Geo. W. Pope, Garfield, Chairman; Drs. S. Lockwood, Woodbridge, and M. M. Stage, Dover.

Clinic Committee Newark Meeting.—Dr. Werner Runge, Newark, Chairman; Drs. James McDonough, Montclair, and E. A. Hogan, Newark.

Delegates to Pennsylvania State Veterinary Medical Association.—Drs. L. P. Hurley, Hopewell; Wm. B. E. Miller, Camden; Edgar L. Landers, Camden; Chas. E. Magill, Haddonfield, and H. W. Read, Freehold.

Delegates to New York State Veterinary Medical Society.—Drs. E. Mathews, Jersey City; A. H. McIntosh, Summit; James McDonough, Montclair; James D. Hopkins, Newark, and John Kehoe, Lyndhurst.

Delegates to the American Veterinary Medical Association.—Drs. J. M. Everitt, Hackettstown; A. W. Axford, Naughton; Wm. J. Fredericks, Delawanna; William Gall, Matawan, and S. S. Treadwell, Englewood.

Delegates to the New Jersey State Sanitary Association.—Drs. J. V. Laddey, Arlington; James C. Corlies, Newark, and G. P. Harker, Trenton.

ONTARIO VETERINARY ASSOCIATION.

The annual meeting of this association was held in the Veterinary College, Toronto, Canada, on Friday, December 21, 1900.

The President, Mr. W. J. Wilson, V. S., of London, opened the meeting with a short address, the substance of which was as follows: "The assembling of ourselves together to-day in annual convention is worthy of more than a passing notice. It marks the closing of the 19th century, which has been one of wonderful advancement in veterinary science. At the beginning of the century veterinary surgeons were almost unheard of, and our literature was very limited. Whereas to-day we hold an honorable position among the professions of the world and our literature is very extensive. I am proud to say that the Ontario Veterinary College has kept well to the front. I believe it to be equal in its facilities for instruction to any veterinary college on the continent of America. I am also proud to say that its graduates as a body have well sustained the reputation of their alma mater. This association was organized in the year 1874. It has continued to meet periodically ever since

its organization, and its original objects have been constantly kept in view—namely, the mutual improvement of its members in those branches of knowledge specially pertaining to their profession, and the advancement of the position and interests of the veterinary profession in the Province of Ontario.”

The minutes of the previous meeting were then read and confirmed. The Treasurer's and Auditor's reports were received and adopted. The Secretary reported the failure of the endeavors to get the act passed in the Provincial Parliament for better legislative measures for the protection of the profession. Also a large amount of correspondence relating to various matters of interest.

A committee was appointed to revise the by-laws of the association, and the meeting adjourned for luncheon.

After luncheon an animated discussion at once commenced, in which many members took part, relating to some alleged violations of professional ethics, and in connection therewith, the committee on revision of the by-laws reported “That our present by-laws be amended by introducing a clause to prevent members of this association engaging in the preparation of any proprietary medicine and placing the same upon the market, and also that any member engaged in preparing secret formulæ, and selling, handling, and disposing of the same shall, by the provisions of this by-law, be disqualified from holding any office in the gift of this association.”

This report of the committee was adopted.

Mr. Shillinglaw gave an account of a rather peculiar case in a mare, of very painful swellings appearing some time after parturition. These swellings disappearing and recurring in different parts of the body at intervals, and the mare otherwise in apparent good health.

Mr. Tennent reported still having most excellent results from Schmidt's treatment of so-called “Parturient Apoplexy of the Cow,” as he reported last year. He adds a little formalin to the iod. of pot. solution.

Mr. McKay and others also spoke very strongly in favor of Schmidt's treatment.

Prof. Reed, of Guelph Agricultural College, does not believe in Schmidt's treatment. He considers the favorable results reported due entirely to abstaining from drenching the cow while in a comatose state. He always gives his medicines through a tube passed down the œsophagus. He believes in chlor. hydr. and pot. brom., and nerve stimulants.

The sum of \$25 was appropriated for a gold medal to be competed for by the graduating class at the coming spring examinations of the Ontario Veterinary College.

The following officers were elected for the ensuing year.

H. S. Wende, President ; J. H. Tennent, First Vice-President ; W. Steele, Second Vice-President ; C. H. Sweetapple, Secretary and Treasurer.

Directors : F. G. Hutton, J. H. George, J. Wagner, W. Shillinglaw, F. J. Gallanough, W. Lawson, D. McMurtry and S. E. Boulton.

Auditors : C. Elliott and J. H. Reed.

Delegates to Industrial Fair, Toronto, Prof. A. Smith and Dr. Duncan.

Delegates to Western Fair, London, W. J. Wilson and J. H. Tennent.
C. H. SWEETAPPLE, *Secretary*.

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

The regular monthly meeting was called to order Jan. 2d, 1901, Dr. Robertson in the chair. Members present : Drs. Bell, Bretherton, Delaney, Goubeaud, Grenside, Parry, Ellis and Amling. Visitors : Drs. G. E. Griffin, 5th U. S. Cavalry, Eichhorn and Miller.

Minutes of previous meeting read and approved. Dr. Keller, who was elected Secretary at the last meeting, having declined to serve, Dr. C. E. Clayton was unanimously elected to that position.

Dr. Grenside then read a very instructive paper entitled, "Acetanalid," which was well discussed by the members generally.

Dr. Goubeaud then outlined the malady called "Œsophagismus," which was thoroughly discussed.

Dr. Griffin made an address upon the status of the veterinarian in the army, and on motion by Dr. Bell, seconded by Dr. Delaney, the society sent a telegram to Senators Depew and Platt urging them to give their support to the bill before the Senate to establish a veterinary corps in the army.

Meeting adjourned at 11 P. M. to a surgical clinic, where Dr. Eichhorn performed double neurectomy for the relief of spavin on a subject furnished by Dr. Goubeaud for the occasion.

C. E. CLAYTON, D. V. S., *Secretary*.

MAINE VETERINARY MEDICAL ASSOCIATION.

The annual meeting of this association was held at Lewiston, Jan. 9th, at 7 P. M., President Dr. A. Joly in the chair.

The members and veterinarians present were Drs. Joly, Russell, West, Salley, Blakely, Goddard, Fairbanks, Inglass, Goff, Brackett and Freeman.

The minutes of the last meeting were approved as read.

President Joly, in his interesting annual address, gave some very good advice to the members and urged that a clinic be held at each meeting. The subject of a veterinary bill to be presented during the present legislature was discussed, and Drs. Russell, Joly, and Blakely were made a committee to present the same. It seems to be a strong opinion of the members that if a proper effort were made a bill could be obtained.

Dr. W. E. Fairbanks and Dr. J. H. Goddard, of Lewiston, were elected members of the association.

The following officers were elected for the ensuing year :

President—A. Joly, Waterville.

Vice-President—C. L. Blakely, Augusta.

Secretary—F. E. Freeman, Rockland.

Treasurer—I. L. Salley, Skohegan.

Censors—F. D. Russell, Orono; W. L. West, Belfast, and J. H. Goddard, Lewiston.

Dr. W. L. West read a very able paper on "Surgical Dentistry," which was well discussed.

The next meeting will be held at Waterville in April. There will be a clinic at Dr. Joly's hospital, and papers will be read by Drs. Purcell and Russell.

F. E. FREEMAN, V. S., *Secretary*.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

The Pennsylvania State Association has appointed as a committee to coöperate with New Jersey's veterinarians in promoting the success of the meeting of 1901, Drs. Harger (President), Pearson, Marshall, Hoskins, and Bridge. The Keystone Veterinary Medical Association will appoint a like committee. This is practical patriotism and sympathetic brotherhood.

In a letter dated Jan. 23, Secretary Stewart writes as follows: "The readers of the REVIEW in this section are noting with much interest the activity of the Eastern associations in the discussion of the approaching meeting of the A. V. M. A. at Atlantic City, and the members and readers are saying to them-

selves, 'I shall attend this meeting if possible.' I trust you will place before the readers of the REVIEW each month the excellent facilities for veterinarians from the area west of Buffalo to secure most favorable transportation rates to the meeting. If it be thoroughly understood that an excursion rate of \$10 is available from Buffalo to Atlantic City and return by the several transportation routes, and with stop-over privileges, I feel sure that many of the members west of Buffalo will take advantage of this privilege, and will begin planning now for that event."

NEWS AND ITEMS.

DR. J. B. BOOMER, of San Francisco, visited veterinary friends in Kansas City on his way home from Chicago recently.

FREDERICK LAMBERTON, D. V. S., of New London, Conn., graduate of the A. V. C., class of '87, died at his home in the early part of December.

THE office and stable of the late Dr. John J. Smith, of Chambersburg, Pa., is offered to let, with instructions to apply at 440 South Second Street.

DR. S. HUTSON CALDWELL, recently resident of Chicago, has accepted an appointment in the meat inspection service in the Bureau of Animal Industry, and has been stationed at Kansas City.

DR. WM. F. LAVERY, of Columbus, Ohio, and formerly a member of the staff of the Ohio State University Veterinary School, is now a member of the meat inspection force stationed at Kansas City.

THE veterinarians of Missouri are very much encouraged over the probable enactment of a practice law by the legislature of that State now in session. The committees in both House and Senate have reported the measure favorably and in all probability it will become a law.

THE "SANITAS" MANUFACTURES, with which we have had some experience, have a pleasant odor, give off active oxygen into the atmosphere, are germicides and powerful deodorizers and are especially suited for use as disinfectants in stables, kennels, etc. They are put up in a variety of forms to suit all requirements.

EXPORTS OF LIVE CATTLE from the United States during the month of December last amounted to 35,186 head, as against 22,872 exported in December of 1899. The valuation placed on those exported in December of 1900 was \$3,152,221

as against \$2,025,850 for those sent abroad in the same month of 1899. Exports for the entire year of 1900 were 361,179 head valued at \$32,400,188 against 336,444 head valued at \$28,677,652 in 1899.

THE IOWA REGISTRY LAW.—The books of registration under the recently passed law, whereby all graduates and others who had been practicing veterinary medicine for a livelihood for a specific number of years might become registered prior to the books being closed to all but those with diplomas, were closed on Jan. 1, 1901. President W. A. Heck, of the Board of Veterinary Medical Examiners, furnishes us with the result of the registration as follows: Non-graduates, 364; graduates, 159.

TAIT BUTLER, V. S., late in charge of inspection at Cudahy, Wis., has resigned from the Bureau of Animal Industry to accept the position of professor of veterinary science and biology at the Kansas State Agricultural College and Experiment Station, Manhattan, Kansas. In conjunction he becomes State Veterinarian of Kansas. We tender our congratulations to the doctor and to the Commonwealth which has been so fortunate as to secure his energies and broad knowledge. Dr. S. Sisson, who was assistant to these positions under Dr. Paul Fischer, retains his functions under Prof. Butler.

PHILIPPINE MEAT INSPECTION.—We have received through the courtesy of Dr. John G. Slee, Assistant City Veterinarian of Manila, a copy of the *Manila Freedom* of Dec. 2, in which is contained the new regulations issued by the Board of Health under the direction of the Provost Marshal General governing the inspection and slaughter of animals at the "matadero." These regulations were submitted to the Board by Dr. W. W. Richards, City Veterinarian, and Dr. Slee, and are a great improvement over the old ones. The order reads as follows: (1) The inspection of all animals for slaughter shall be under the direction of inspectors appointed by the Board of Health of Manila, P. I. (2) All persons holding licenses for slaughtering animals in the Manila matadero, for food purposes, are subject to all the regulations, orders, and instructions that may be made by the Board of Health for carrying on the work of inspection at the matadero. (3) All animals for slaughter must be at the matadero by 4.30 P. M. of each day in order that an ante-mortem examination can be made. (4) The inspector in charge of the matadero shall be present at 4.30 P. M. in order to make the ante-mortem examination. (5) All animals presenting a diseased condition upon ante-mortem examination shall be re-

moved from the matadero unless presenting symptoms of a contagious or infectious character. (6) No animal presenting symptoms of advanced pregnancy shall be slaughtered until ten days after parturition, and the owner will not be permitted to remove such animals from the matadero except when they are afflicted with or have been exposed to the contagion of any disease. (7) Slaughtering shall commence at 5 P. M. each day. (8) The inspector shall hold post-mortem examination every day and on every animal slaughtered. (9) The head, tail, caul or fat enclosed in the omentum of the animal and all other portions that are used for food products shall be preserved in such manner as to preserve their identity until after post-mortem inspection has been completed in that they may be identified in case the carcass is condemned. Should the animal on said post-mortem examination be found to be diseased or otherwise unfit for human consumption, the entire carcass shall be cremated. (10) All animals found at post-mortem examination to be affected as follows are to be condemned and the carcasses cremated: *a*, Hog cholera and swine plague; *b*, cysticercus; *c*, anthrax; *d*, rabies; *e*, pyæmia and septicæmia; *f*, mange and scab in advanced stages; *g*, advanced stages of actinomycosis; *h*, inflammation of the lungs, the intestines, or the peritoneum; *i*, extensive or generalized tuberculosis; *j*, rinderpest; *k*, any disease or injury causing elevation of temperature or affecting the system of the animal to a degree which would make the meat unfit for human consumption (food). Any organ or part of a carcass which is badly bruised or affected by tuberculosis, actinomycosis, cancer, abscess, suppurating sore, or tapeworm cyst, must be condemned; *l*, animals in advanced stage of pregnancy or which have given birth to young within ten days; *m*, animals too emaciated and anæmic to produce wholesome meat; *n*, all unborn animals must be cremated.

ALEX. EGER, 34 East Van Buren St., Chicago, Ill.,

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REVIEWS TO EXCHANGE.

I have the following duplicate numbers of the AMERICAN VETERINARY REVIEW, which I would like to exchange for numbers *below* Vol. X:—Vol. XI, No. 5; Vol. XIV, No. 3; Vol. XV, Nos. 3 and 5; Vol. XVIII, No. 5; Vol. XIX, Nos. 11 and 12; Vol. XX, No. 2; Vol. XXI, No. 2; Vol. XXII, No. 1; Vol. XXIII, No. 6. Correspondence solicited for earlier volumes. Address WM. H. GRIBBLE, D.V.S., Washington C. H., Ohio.